user's guide

The information in this document is subject to change without notice.

Hewlett-Packard® Company makes no warranty of any kind with regard to this material, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose.

HP shall not be liable for errors contained herein or for incidental or consequential damages in connection with the furnishing, performance, or use of this material.

THE WARRANTY TERMS CONTAINED IN THIS STATEMENT, EXCEPT TO THE EXTENT LAWFULLY PERMITTED, DO NOT EXCLUDE, RESTRICT OR MODIFY AND ARE IN ADDITION TO ANY MANDATORY STATUATORY RIGHTS APPLICABLE TO THE SALE OF THIS PRODUCT OR SERVICE TO YOU.

HP assumes no responsibility for the use or reliability of its software on equipment that is not furnished by HP.

This document contains proprietary information that is protected by copyright. All rights are reserved. No part of this document may be photocopied, reproduced, or translated to another language without the prior written consent of HP.

Hewlett-Packard Company
P.O. Box 4010
Cupertino, CA 95015-4010
USA

© 2000, 2003 Hewlett-Packard Development Company, L.P. All rights reserved.

Hewlett-Packard is a registered trademark of Hewlett-Packard Company in the United States of America and other countries/regions.

This product incorporates copyright protection technology that is protected by method claims of certain U.S. patents and other intellectual property rights owned by Macrovision Corporation and other rights owners. Use of this copyright protection technology must be authorized by Macrovision Corporation, and is intended for home and other limited viewing uses only unless otherwise authorized by Macrovision Corporation. Reverse engineering or disassembly is prohibited. Apparatus Claims of U.S. Patent Nos. 4,631,603, 4,577,216, 4,819,098, and 4,907,093 licensed for limited viewing uses only.

Other brand or product names are trademarks of their respective holders.

HP supports lawful use of technology and does not endorse or encourage the use of our products for purposes other than those permitted by national copyright law.

table of contents

finding answers to commonly asked questions 1
safety information 2

setting up your pc 3
putting your pc together 3
- safety and comfort 4
- pc back 5
- pc front 7

connecting the modem 8
- upgrading your 56k modem 9

setting up the ethernet connection 9
turning on your pc for the first time 10
registering your pc 11
turning off the pc 11
- standby mode 11
- hibernation mode 12
- automatic standby or hibernation 13

making recovery cds/dvds 13
installing software and hardware devices 14
- transferring your old pc information and files to your new pc 14

learning the basics 15
beginning to use your software 15
using the desktop 16
- using the start menu 16
- learning to use your pc 17
- using the all programs menu 17
- organizing your all programs list 17
- using pc help & tools 18

using the mouse 18
scrolling 19
autoscrolling 20
panning 20
switching mouse button functions 20
changing mouse pointer speed 20
using the keyboard 21
about your keyboard 21
wireless keyboard set 24
standard keyboard features 24
customizing the buttons 29
adjusting the monitor 29
using a printer 30

using the internet 31
about the internet 31
setting up your internet account 32
signing up for a new or an existing isp account using easy internet sign-up ... 33
using a browser 34
searching the internet 34
restricting internet content 35
sending and receiving e-mail 35
if using outlook express 36
if your isp provides the e-mail program 37

getting help 39
help and support center 39
using updates from hp 39
getting messages 40
turning off messages 40
re-enabling messages 40
resolving problems 41
upgrading and servicing the pc 41
warranty & support guide 41
online guides 41
web sites about your pc 42
microsoft windows xp operating system 42

working with sound, pictures, and video 43
using speakers 43
adjusting speaker volume 44
connecting a multi-channel speaker system to your pc 44

using a microphone 46
adjusting microphone volume 47
using the microphone with multi-channel audio 47
working with digital images 48
using hp image zone 48
about the 7-in-1 memory card reader 50
using your cd, dvd, and diskette drives 53
handling cds/dvds 53
inserting and removing cds and dvds 54
using the combo drive 55
using the diskette (floppy) drive 56
playing cds and dvds 56
playing music cds with musicmatch jukebox 57
playing cds and dvds with windows media player 57
playing dvd movies with the intervideo windvd player 58
playing video cds 61
creating (burning) cds with recordnow! 62
creating (burning) music cds with windows media player 64
creating (burning) data cds using windows xp program 65
creating (burning) dvds using the dvd writer drive 65
using a tv as a monitor 66
cables you may need 66
connecting to a tv set 66
viewing the pc image on your tv screen 68
disabling the tv option 68
disconnecting the tv 69
using your multi-storage bay 69
storing cds, dvds, or memory 70
docking a peripheral device 70
placing a peripheral device on the multi-storage bay (top) 71
using the optional camera station pc top 72

taking care of your pc 75

protecting your pc from power surges 75
using virus protection programs 75
increasing available hard disk drive space 76
unavailable hard disk drive space 76
emptying the recycle bin 77
uninstalling programs 77
removing desktop icons 78
cleaning up your hard disk drive 78

troubleshooting 79

using application recovery and system recovery 91
creating recovery cds/dvds 94
using recovery cd-dvd creator 95
using the recovery tools cd 96
system restore 96
application recovery 97
system recovery 98
starting system recovery if the pc is responding 98
starting system recovery if the pc is not responding 99
system recovery using recovery discs 99
starting system recovery using recovery discs 99

upgrading and servicing the pc 101

upgrading and servicing the pc (1) 103
opening and closing the pc 104
preparing the pc 104
before opening the pc 104
after closing the pc 105
removing the side panel 105
replacing the side panel 106
locating components inside the pc 106
removing the front panel 107
replacing the front panel 108
removing and replacing drives 109
removing an optical drive 109
installing an optical drive 110
removing the 7-in-1 memory card reader or the diskette (floppy) drive 111
installing the 7-in-1 memory card reader or the diskette (floppy) drive 113
removing the preinstalled hard drive 114
replacing the preinstalled hard drive 116
installing a second hard drive 117
removing a second hard drive 121
adding memory 123
about installing ddr dimms 123
removing a memory module 124
installing a memory module 125
add-in cards 125
removing an add-in card 126
installing an add-in card 127
replacing the battery 128

upgrading and servicing the pc (2) 129
chassis features of the pc 129
opening the computer 130
before you begin 130
removing the side panel 131
removing the fan duct 132
removing the drive cage 133
adding memory 135
dimms 135
ddr dimms 136
installing a memory module 136
removing a memory module 138
installing add-in cards 139
what is plug and play? 140
if the new card or device isn't working 141
adding and removing drives 141
installing a second hard drive 141
removing the preinstalled hard drive 142
replacing the diskette drive 142
replacing the optical drive 144
replacing the battery 149
closing the computer 150
replacing the drive cage 151
replacing the fan duct 153
replacing the side panel 154

index 155

finding answers to commonly asked questions

In this *User's Guide,* you can find answers to questions about the following topics:

- Connecting to the Internet, page 32
- Registering your product, page 11
- Creating a CD, page 62
  Saving documents, photos, and videos on a CD, page 64
  Recording a music CD, page 63
  Copying a CD, page 62
  Backing up your files to a CD, page 64
- Watching movies on your PC, page 58
- Connecting to a TV, page 66
- Getting digital pictures onto your PC, page 48
- Connecting a printer, page 29
- Finding help if something doesn't work, page 39
- Keeping your PC healthy, page 75
- Going back a day (System Restore), page 96
- Recovering your PC, page 91
- Adding memory, page 101

NOTE: This guide contains details on options that may not be included with your PC. Your PC may look different from the illustrations in this guide. The monitor and the speakers are sold separately. Speakers may be included with the monitor (select models only).

---

safety information

This product has not been evaluated for connection to an "IT" power system (an AC distribution system with no direct connection to earth, according to IEC 60950).

ac power safety warnings

WARNING: Install the PC near an AC outlet. The AC power cord is your PC's main AC disconnecting device and must be easily accessible at all times. For your safety, the power cord provided with your system has a grounded plug. Always use the power cord with a properly grounded wall outlet to avoid the risk of electrical shock.

WARNING: To reduce the possibility of an electric shock from the telephone network, plug your PC into the AC outlet before connecting it to the telephone line. Also, disconnect the telephone line before unplugging your PC from the AC power outlet.

WARNING: Your system is provided with a voltage select switch for use in a 115 or 230 VAC power system. The voltage select switch has been pre-set to the correct voltage setting for use in the particular country/region where it was initially sold. Changing the voltage select switch to the incorrect position can damage your PC and void any implied warranty.

WARNING: Always disconnect the modem cord from the telephone system before installing or removing your PC cover.

WARNING: Do not operate the PC with the cover removed.

WARNING: The power supply is not user-serviceable. To prevent damage to the power supply, have a qualified person repair or replace it. All other components are user-serviceable.

WARNING: Electrostatic discharge (ESD) can damage disk drives, add-in cards, and other components. If an ESD station is not available, wear a wrist strap attached to a metal part of the PC. Place cards on a conductive foam pad or inside the card wrapper, if possible, but never on the card wrapper.

setting up your pc

putting your pc together

Follow the quick setup poster to set up your PC.

Look in the PC box for printed details or updates regarding your model PC.

When placing your PC, consider an ergonomic arrangement of the PC and your work area to maintain your comfort and productivity. Refer to "safety and comfort" on page 4.

WARNING: The power supply is pre-set for the country/region in which you purchased your PC. If you move, please check the voltage requirements before plugging your PC into an AC power outlet.

NOTE: Refer to "protecting your pc from power surges" on page 75 for information on protecting your PC.

Put your PC together in this order:

1. Position the PC chassis and connect the power cord to the chassis and to the power outlet, but do not turn on the PC.
2. Position the monitor (sold separately) and connect the power cord to the power outlet, but do not turn on the monitor. Connect the monitor cable to the PC.
3. Position the keyboard and the mouse and connect each to the PC.

   NOTE: Your PC uses active speakers only. Active speakers have a power cord and connect to the green Audio Out connector on the back of the PC. Passive speakers have no power cord or power switch.

4. Position speakers (select monitor models include speakers), connect them to the PC, and then connect the speaker power cord to the power outlet, but do not turn on the speakers.

5 Connect the modem cable to the telephone line wall jack and to the modem (select models only) on the back of the PC. Refer to "connecting the modem" on page 8 for details.

6 Turn on the monitor. Turn on the PC. Turn on the speakers. Follow the onscreen instructions and complete the initial windows until you see the desktop. Refer to "turning on your pc for the first time" on page 10 for details.

7 Restart the PC: Click the **Start** button on the taskbar, click **Turn Off Computer**, and then click **Restart**. The PC turns off and then starts again. This completes the initial startup process.

safety and comfort

After assembling your PC, but before you begin using it, arrange the PC and your work area to maintain your comfort and productivity. Refer to the Safety & Comfort Guide for important ergonomic information.

computer safety warning

WARNING: To reduce the risk of serious injury, read the Safety & Comfort Guide. It describes proper workstation setup, posture, and health and work habits for computer users. It also provides important electrical and mechanical safety information.

To view the Safety & Comfort Guide:

- Click **Start**, choose **All Programs**, choose **PC Help & Tools**, and then click **Safety & Comfort Guide**.

Or

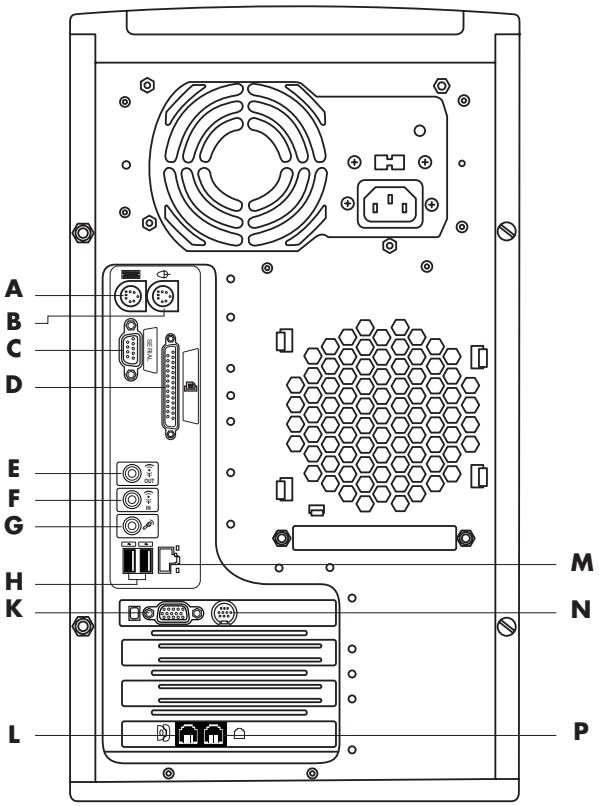
- Type
  http://www.hp.com/ergo/
  into your Web browser address box, and then press Enter on the keyboard.

pc back

Connect your main hardware devices like the monitor, keyboard, and mouse at the back of the PC. Other peripheral devices like a printer, scanner, camera, or other equipment also plug into connectors on the back of your computer. Some PC models also have connectors on the front of the PC.

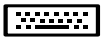
Your PC features and connector positions may vary.

A PS/2 keyboard
B PS/2 mouse
C Serial port
D Parallel port
E Audio Out
F Audio In
G Microphone
H USB 2.0
K Monitor
L Telephone
M Ethernet (network interface)
N TV out
P Modem (to telephone line wall jack)



NOTE: PCs use software drivers to control peripheral devices. When you add a Plug and Play (ready to use) peripheral, memory, or add-in card, the PC automatically loads the correct driver for the device.

NOTE: For peripherals that are not Plug and Play, follow the instructions that came with your peripheral device to load the appropriate driver.

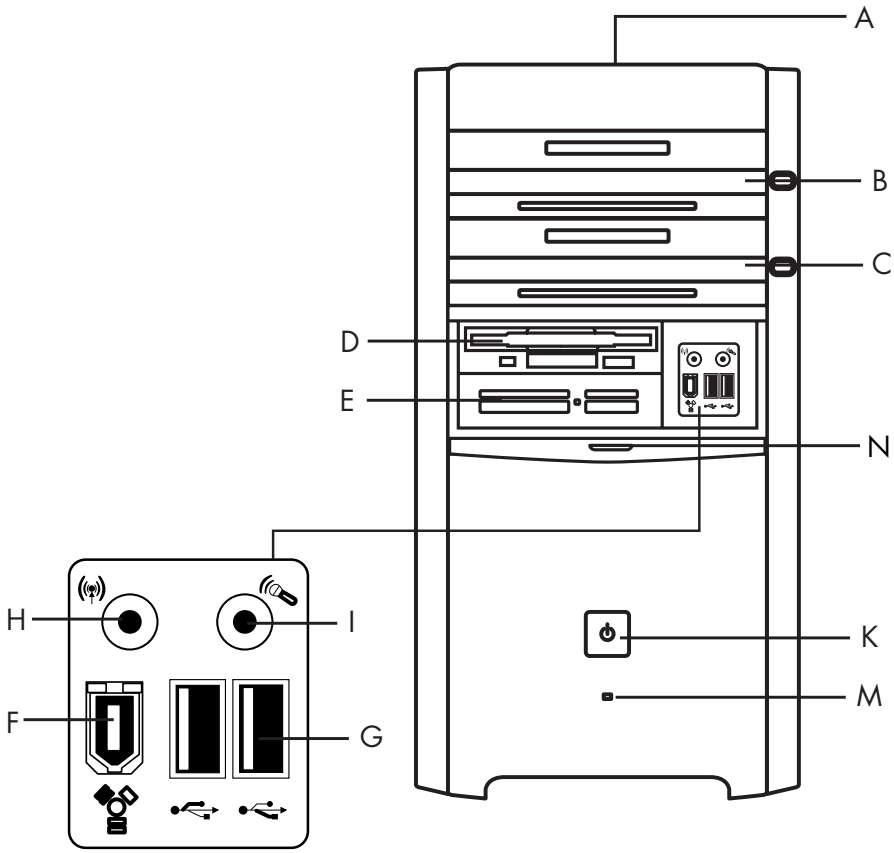
Connector Symbol	Description
	Mouse (PS/2)
	Keyboard (PS/2)
	Universal Serial Bus (USB) for mouse, keyboard, digital cameras, or other devices with USB connectors
	Printer (parallel)
	Monitor
serial	Serial port for digital cameras or other serial devices
OUT	Audio Line Out (powered speakers)
IN	Audio Line In
	Headphones
	Microphone
	FireWire® (IEEE 1394) for video cameras or other devices with very fast transfer rates.

pc front

The front of your computer has the drives, the On button and hard disk drive activity indicator light. Some PC models also have connectors on the front of the PC.

Your PC features and connector positions may vary.

- **A** CD storage
- **B** CD-ROM or CD-RW drive
- **C** DVD-ROM or DVD Writer drive
- **D** Diskette (floppy) drive
- **E** 7-In-1 memory card reader
- **F** FireWire (IEEE 1394)
- **G** USB 2.0 (two shown)
- **H** Audio line in
- **I** Microphone
- **K** On button/indicator
- **M** Hard disk drive activity indicator light
- **N** Door opened to show connectors



connecting the modem

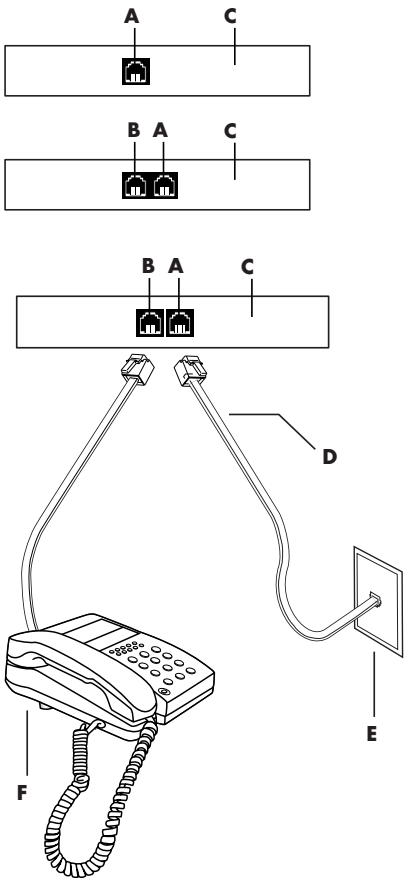
The modem is used for connecting to an ISP that provides telephone dial-up connection to the Internet.

NOTE: Your PC may not come with a modem.

Check with your ISP for specifics on your connection.

Before you can connect to the Internet and send or receive e-mail and faxes using telephone dial-up, you must connect your telephone service line to the modem, which is inside the PC. The quick setup poster shows you how to plug in a modem/telephone cable to the PC modem connector and to your telephone service line wall jack connector. To identify the modem connector, look at the back panel of the PC. The modem connector looks similar to one of the following illustrations.

NOTE: Your PC may have only one modem/telephone connection.



A Modem connector (select models only)
B Telephone connector (select models only)
C Back of PC
D Modem/telephone cable
E Wall jack
F Telephone (not provided)

other ways to connect

There are other ways to connect to the ISP that do not use the telephone modem, such as a LAN (Local Area Network) or DSL (Digital Subscriber Line). Check with your ISP for specifics on your connection.

See "setting up the ethernet connection" on page 9 if you are connecting through a LAN.

To connect the cable between the modem and the telephone service line:

1. Plug one end of a modem cable (**D**) into the modem connector (**A**) on the back of the PC (**C**). This connector may be labeled with either *Line* or a modem connector symbol.
2. Plug the other end of the cable (**D**) into the telephone service line jack (**E**) on the wall.

You can also connect a telephone (**F**) to the other connector (**B**) on the modem (select models only). By connecting a telephone to the modem, you can make regular (voice) telephone calls when you are not using the modem — even if the PC is turned off.

upgrading your 56k modem

Your modem driver can be upgraded to enable certain V.92 features. For information, go to the Support Web site listed in the *Warranty & Support Guide*, click the support link, type *modem upgrade* into the search box, and then click the arrow to the right of the box. Follow the instructions provided.

NOTE: Your ISP must support the V.92 standard to use any of the V.92 features.

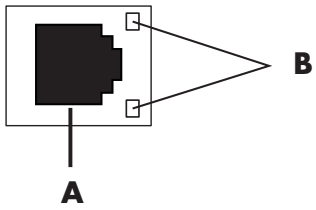
setting up the ethernet connection

The Ethernet connection (may be called a network interface adapter, a *Network Interface Card*, or *NIC*) provides a high-speed, or broadband, connection to an Ethernet (10BaseT) or Fast Ethernet (100BaseT) network. After this interface is connected to a network such as a LAN (local area network), you can connect to the Internet through the LAN. This network connection also allows you to share printers, data, and other devices among your PCs.

NOTE: Your PC may not come with an Ethernet connector.

Locate the Ethernet connector (a RJ-45 port) on the back of the PC.

A Ethernet connector (RJ-45 port)
B Ethernet indicator lights



To connect the Ethernet connector to the network:

1 Plug the network cable into the Ethernet connector (**A**) on the back of the PC.

WARNING: Do not plug the telephone service line cable or modem cable into the Ethernet connector. Although the plug looks similar to the plug on the Ethernet cable, they are not the same.

2 Plug the other end of the Ethernet cable into a 10BaseT or a 100BaseT port on the network hub.

NOTE: Hubs are devices that can connect PCs to a network.

3 With the PC turned on, check the lights next to the Ethernet connector for status:

- **ACTIVITY** — Lit yellow during network data transfer activity
- **LINK** — Lit green with valid network connection

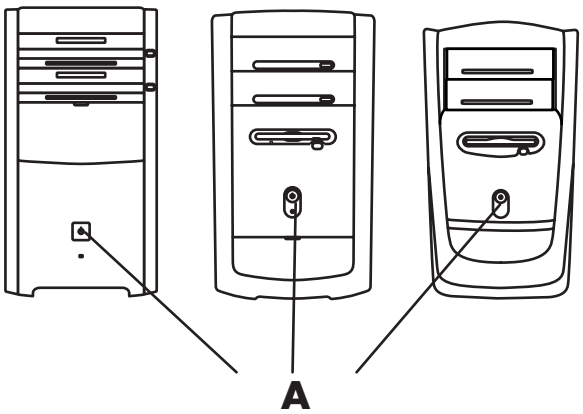
turning on your pc for the first time

After you have completed the steps on the quick setup poster, you are ready to turn on your PC.

1 Press the Power button on the monitor.

2 Press the On button (**A**) on the front of the PC (see the following figure).

3 Press the Power button on the speakers, if they are present.



4 Click an option to select your language (if applicable for your model). Click **OK** and then confirm your selection by clicking **Yes**. Wait until the PC makes preparations. (It may take up to 30 minutes to set up the language on the PC.)

5 Set up Microsoft® Windows® by following the onscreen instructions.

6 Refer to the following section, "registering your pc," for information on completing the registration process (select models only).

7 Double-click the large **Internet Access** icon on your desktop, if it is present. Wait until the PC displays the Easy Internet Sign-up window, and then follow the onscreen instructions.

8 Restart the PC: Click **Start** on the taskbar, click **Turn Off Computer**, and then click **Restart**.

registering your pc

You may be prompted to register the PC (select models only). Register so you can receive changes, updates, and support. You can register any of these ways:

- Double-click the registration icon on your desktop, and follow the onscreen instructions.
- Register online at http://register.hp.com

turning off the pc

For best results, turn off the PC without pressing any buttons on the PC chassis.

1 Close any open software programs. To close programs, click **X** in the upper-right corner of each window.

2 Click **Start** on the taskbar.

3 Click **Turn Off Computer**, at the bottom of the menu.

4 Click **Turn Off**.

5 Turn off the monitor.

As an alternative to turning off the PC, you can put the PC in either standby or hibernation mode. To conserve power, you can set the power management timers to put the PC automatically into standby and then hibernation. See the following sections for more information on putting your PC in standby or hibernation mode.

standby mode

When the PC is in standby mode, it goes into a low-power state and the monitor is blank as if it is turned off. The advantages of using standby mode include:

- You save time and electricity without having to wait for the PC to go through the normal startup routine when you wake it again. The next time you use the PC, any programs, folders, and documents that were open before you put the PC in standby will be available.
- Your PC can receive faxes while in standby mode, if you set it to do so.
- Your PC can retrieve e-mail messages and download information from the Internet automatically, if you set it to do so.

To put the PC in standby mode manually:

1 Press the Standby button on the keyboard, if it is present.

The screen goes dark, and the PC goes into standby mode.

2 When you want to use the PC again, press the Esc key on the keyboard, or press the Standby button. The screen display reappears just as you left it.

Another way to put the PC into standby mode is to:

1 Click **Start** on the taskbar.

2 Click **Turn Off Computer**.

3 Click **Stand By**.

4 To wake the PC from standby, press the Standby button or press the Esc key on the keyboard.

If the PC does not work properly when you wake it from standby, restart the PC:

1 Press and hold the On button on the front of the PC for approximately 5 seconds until the PC turns off.

NOTE: Using the On button to restart the PC is not recommended and should be used only as a last resort. Instead, click **Start**, click **Turn Off Computer**, and then click **Restart**.

---

2 Turn on the PC again.

hibernation mode

When the PC is in hibernation mode, it saves everything that is in PC memory to the hard disk drive, turns off the monitor and the hard disk drive, and then turns itself off. When you turn on the PC again, your programs, folders, and documents are restored to the screen.

To put the PC into hibernation manually:

1 Click **Start** on the taskbar.

2 Click **Turn Off Computer**.

3 Press and hold down the Shift key on the keyboard, and click **Hibernate**.

NOTE: If Hibernate is not present, you can set up your PC for hibernation; refer to steps 1 through 6 of "automatic standby or hibernation" on page 13.

---

4 When you want to use the PC again after hibernation, press the On button on the front of the PC.

If the PC does not work properly when you wake it from hibernation, follow these steps to restart the PC:

1. Click **Start** on the taskbar.
2. Click **Turn Off Computer**.
3. Click **Restart**.

automatic standby or hibernation

You can set your PC to go into standby or hibernation mode automatically when it is idle for some number of minutes. To put the PC into standby or hibernation mode automatically, modify the power management settings:

1. Click **Start** on the taskbar.
2. Click **Control Panel**.
3. Click **Performance and Maintenance**, if it is present.
4. Double-click **Power Options**.
5. Click the **Hibernate** tab and check the hibernation feature. If necessary, enable the feature by clicking the *Enable hibernation* box so that a check mark appears in it.
6. If you changed the *Enable hibernation* check box, click **Apply**.
7. Click the **Power Schemes** tab to set the timers for standby and hibernation. In the Power Schemes box, select a power scheme from the drop-down list. Choose the settings:
   - To turn on automatic standby for the PC, click the time to elapse before standby (such as **After 20 mins**) in the *System standby* list.
   - To set the timer for automatic hibernation, click the time to elapse before hibernation (such as **After 1 hour**) in the *System hibernates* list.

   NOTE: If both standby and hibernation timers are set, the system hibernation timer must be set for a longer time than the system standby timer.
8. Click **OK**.

making recovery cds/dvds

Now is a good time to make your recovery discs; see "creating recovery cds/dvds" on page 94.

installing software and hardware devices

After you turn on the PC the first time and restart it (see page 10), you can install any software programs that came on CDs or DVDs included in the PC box (select models only).

You may wish to install additional software programs or hardware devices on your PC. Restart the PC after installation.

Choose software that is compatible with your PC — check the operating system, memory, and other requirements listed for the new software for compatibility with your PC.

Install the new software according to the directions provided by the software manufacturer. Check the manufacturer's documentation or customer service information for help if you need it.

hp products work better together

HP computers include pre-loaded software for select HP All-In-One, camera, scanner, and printer peripheral products. Pre-loaded software simplifies and speeds product setup for HP peripherals. Simply connect the HP peripheral product, turn it on, and your HP PC automatically configures it so it is ready to use.

transferring your old pc information and files to your new pc

See the built-in Microsoft Windows Help and Support Center, described on page 39; search for *transfer wizard*, and select the overview article, *Files and Settings Transfer Wizard overview*. This information describes a Microsoft solution for moving your files onto your new PC.

learning the basics

NOTE: To use your software, you must know how to use the mouse and keyboard. If necessary, see "using the mouse" on page 18 or see "using the keyboard" page 21.

beginning to use your software

The operation of your PC is controlled by two kinds of software:

- The Microsoft Windows XP operating system, which displays the desktop on the monitor and controls your PC's hardware, peripherals, and software applications.
- Software programs, such as a word processing program, which perform specific functions.

Information about using software and about the Microsoft Windows XP operating system is in the printed manuals and online Help. For Microsoft Windows, you can also press the Help button, labeled with a question mark icon on your keyboard (select models only), to open the built-in Help and Support Center. For help with specific software, refer to the onscreen Help within the program.

Software programs included with the PC may vary by model and by country/region.

using the desktop

The desktop has shortcut icons that make it easy to find the things you need.

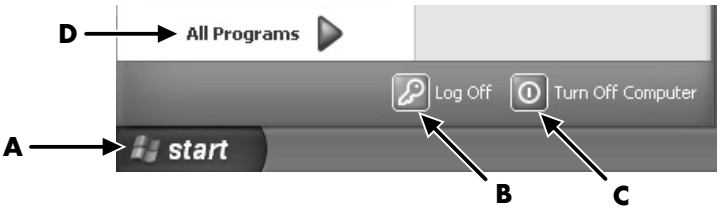
Icon	Opens	Use it to
	Help and Support (select models only)	View onscreen Help information about your PC.
	Easy Internet Sign-up	Set up a new or an existing Internet account.
	Recovery	Start Application or System Recovery.
	HP Image Zone	Manage and protect your still photos, scanned images, and video clips.

using the start menu

Click the **Start** button to open the start menu and:

- Select programs or documents.
- Open the Help and Support Center.
- Start a search.
- Run a program.
- Open the Control Panel to view or change settings.

A Start button on the taskbar
B Log Off button
C Turn Off Computer button
D All Programs



Click **About my HP PC** to view information about your PC. (See "learning to use your pc" on page 17.)

The Start menu also displays the buttons *Log Off* and *Turn Off Computer*:

- Click the **Log Off** button to end your current PC session and to switch between users.
- Click the **Turn Off Computer** button to turn off the PC or to restart it.

learning to use your pc

Click the **Start** button and select **About my HP PC** (select models only). A window opens with a welcoming message. Click an item on the left of the message to view information about your PC, including:

- Locations of drives and connectors on the front of the PC chassis.
- Descriptions and uses of software programs included with your PC.
- Access to the Internet.
- Help and Support.
- Recovery of the operating system and software programs.

For detailed instructions and information about your PC (select models only):

1. Click **Start**.
2. Choose **Help and Support**.
3. Choose **HP Pavilion PC Help**.

using the all programs menu

To find the software programs on your PC:

1. Choose **Start**.
2. Choose **All Programs**.

organizing your all programs list

You see folders organized according to task (select models only) when you:

1. Click **Start**.
2. Choose **All Programs**.

A folder contains a list of items. Each item is actually a shortcut, or *link*, to a program, document, or another folder. The Music folder, for example, contains shortcuts to the programs you use to play music CDs.

To change the name of an item:

1. Right-click the item.
2. Select **Rename**.
3. Type the new name and press Enter on the keyboard.

To move an item by using the drag-and-drop technique:

1. Select the item in All Programs or in a folder.
2. Left-click the item and hold down the mouse button.
3. Move the mouse pointer to where you want the item, and then release the mouse button.

   (If you have problems dropping the item into a folder, drag it to your desktop, and then drag it to the folder.)

To copy an item:

1. Right-click the item.
2. Select **Create Shortcut**. The shortcut appears in the folder.
3. Drag the item into the All Programs list or into another folder.

If you use *Add or Remove Programs* in the Control Panel to delete a software program, the shortcut in All Programs may not be removed. To remove a shortcut:

1. Click **Start**.
2. Choose **All Programs**.
3. Select the folder.
4. Right-click the shortcut, and then select **Delete**. Click **Delete Shortcut** to confirm you want to delete the shortcut.

using pc help & tools

The PC Help & Tools folder (select models only) in the All Programs menu contains special utilities for PC owners. This folder also contains any onscreen guides included with your PC.

To see the items in the PC Help & Tools folder:

1. Click **Start** on the taskbar.
2. Choose **All Programs**.
3. Choose **PC Help & Tools**.
4. Click an item to view it or use it.

NOTE: If there are no guide titles listed in PC Help & Tools, your PC has no onscreen guides.

---

using the mouse

Your PC includes a mouse for directing the cursor (pointer) on the Windows desktop. The mouse uses a roller ball or optics (a light and sensor) to sense movement and cause the cursor on the screen to move. Use the mouse on a flat surface.

NOTE: The optical mouse cannot work on a glass, translucent, or reflective surface.

A wireless mouse (select models only) is an optical mouse that uses a receiver/transmitter, instead of a connector cable, to communicate with your PC. A light on the receiver indicates receiver activity. Refer to "wireless keyboard set" on page 24 for receiver indicator information.

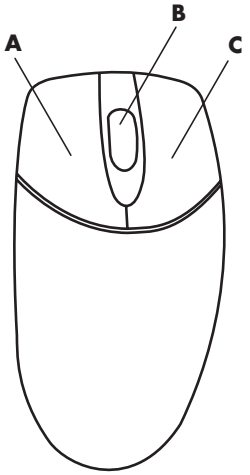
NOTE: The wireless mouse goes into a sleep or suspend mode after 20 minutes of inactivity. Click a button on the mouse to wake it. (Moving the wireless mouse does not wake it.)

The mouse has two or three buttons on the top:

- Click the left mouse button to position the cursor or to select an item.
- Click the right mouse button to display a menu of commands for the item you clicked.
- On select models, use the scroll wheel button in the center for scrolling and panning.

Double-click means to press the left button on the mouse two times in a row. To double-click, you click the button (press it and then release it), and then quickly click it again.

A Left button
B Scroll wheel button (scrolling mouse only)
C Right button



NOTE: Your mouse may look different from the one shown here.

You can switch the function of the left and right buttons for left-handed use. Refer to "switching mouse button functions" on page 20.

If your mouse does not work properly, refer to "troubleshooting" on page 79.

scrolling

Click the left mouse button to place the cursor in a document, and then:

- To scroll toward the beginning of a document, roll the scroll wheel button up (away from you).
- To scroll toward the end of a document, roll the scroll wheel button down (toward you).

autoscrolling

1. Place the cursor anywhere in the text, and press the scroll wheel button once. An autoscroll icon appears.
2. Move the mouse in the direction you want to scroll. The farther you move the mouse from the starting point, the faster the document scrolls.
3. To stop autoscrolling, press the scroll wheel button again.

NOTE: Autoscrolling does not work with some software programs.

---

panning

1. Press and hold down the center scroll wheel button.
2. Slowly move the mouse in the direction you want to pan. The farther you move the pointer from the starting point, the faster the document pans.
3. To stop panning, release the scroll wheel button.

NOTE: Panning only works if the window's horizontal scroll bar is active. Panning does not work with some software programs.

---

switching mouse button functions

To switch the functions of the right and left mouse buttons:

1. Click the **Start** button.
2. Click **Control Panel**.
3. Click **Printers and Other Hardware**, if it is present.
4. Double-click **Mouse**.
5. Check *Switch primary and secondary buttons* on the **Buttons** tab.
6. Click **Apply** (using the new primary button), and then click **OK**.

changing mouse pointer speed

To change the speed of the cursor on the screen relative to the motion of the mouse:

1. Click the **Start** button.
2. Click **Control Panel**.
3. Click **Printers and Other Hardware**, if it is present.
4. Double-Click **Mouse**.
5. Click the **Pointer Options** tab.
6. In the area, Motion, use the slider to adjust the pointer speed.
7. Click **Apply**, and then click **OK**.

using the keyboard

about your keyboard

Your keyboard has an arrangement of standard keys, indicator lights, and special buttons (select models only). Locate your keyboard among the following illustrations and read the feature list for it. Your keyboard may vary from the illustrations.

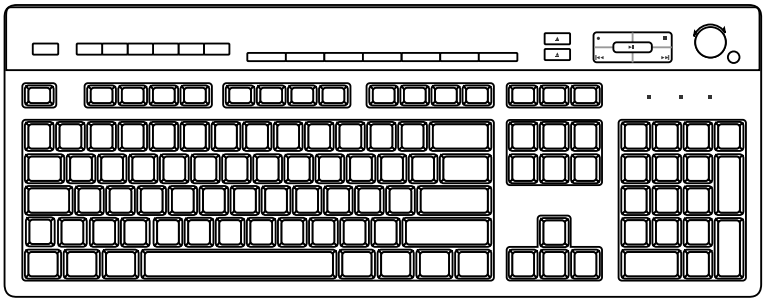
internet keyboards

Internet keyboards may connect directly to your PC or may be wireless. (See "wireless keyboard set" on page 24 for a description of the wireless set.)

Some keyboards do not have the Internet buttons shown here at the top of the keyboard, and some use a different layout on the top right.

Find your keyboard among the following illustrations to read about its features.

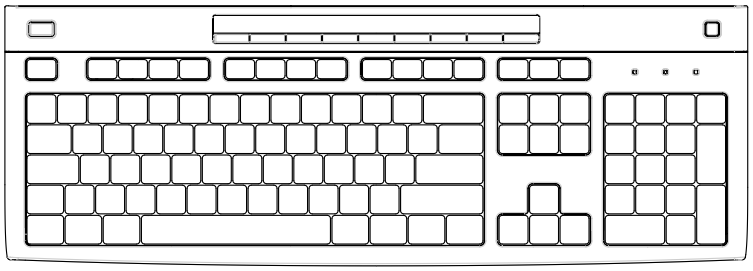
internet keyboard 1



This keyboard enables you to:

- Adjust speaker volume.
- Connect to the Internet (if you have an established Internet account).
- Search for information on the Internet.
- Place the PC into standby to save power.
- Start, pause, and stop playing a CD or DVD, skip to the previous or next track, record, and eject the disc tray (for two drives).
- Mute speaker sound.
- Customize the buttons to open programs and connect to Internet Web sites.
- Get support information.
- Find a file or program on the hard disk drive.

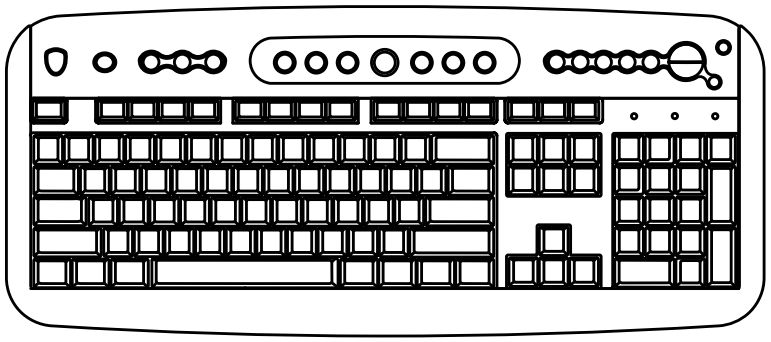
internet keyboard 2



This keyboard enables you to:

- Mute speaker sound.
- Search for information on the Internet.
- Customize the buttons to open programs and connect to Internet Web sites.
- Find a file or program on the hard disk drive.
- Place the PC into standby to save power.
- Get support information.
- Connect to the Internet (if you have an established Internet account).

internet keyboard 3

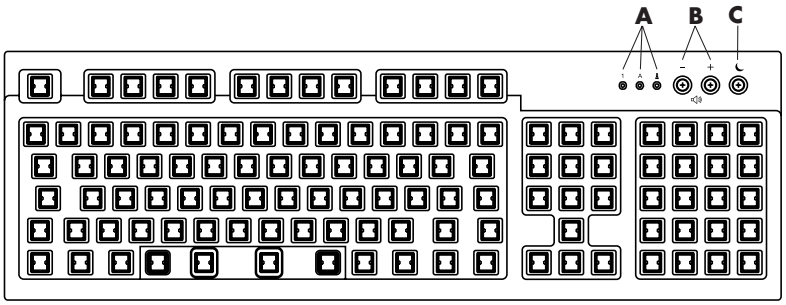


This keyboard enables you to:

- Adjust speaker volume.
- Customize the buttons to open programs and connect to Internet Web sites.
- Search for information on the Internet.
- Find a file or program on the hard disk drive.
- Start and stop playing a CD or DVD, skip to the previous or next track, and eject the disc tray (top drive only).

- Place the PC into standby to save power.
- Connect to the Internet (if you have an established Internet account).
- Mute speaker sound.
- Get support information.
- Print.

standard keyboard



This keyboard enables you to:

- Adjust speaker volume.
- Place the PC into standby to save power.

LEDs, light emitting diodes, are lights used to indicate status.

A The lights (LEDs) turn on to indicate (left to right) the number lock on, the capitals lock on, and the scroll lock on.

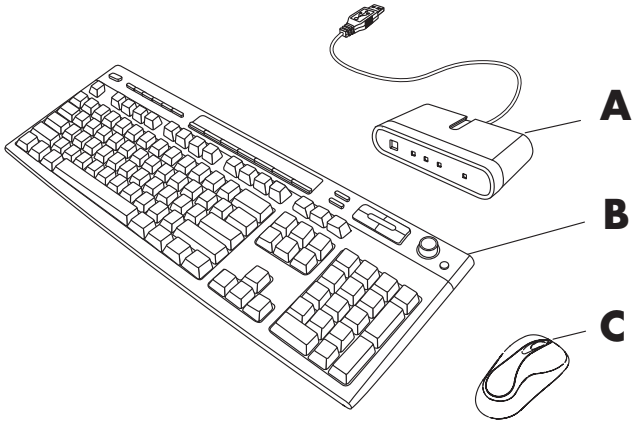
B The plus (+) and minus (–) buttons adjust the speaker volume.

C The moon icon button places the PC into standby mode or wakes the PC from standby mode.

wireless keyboard set

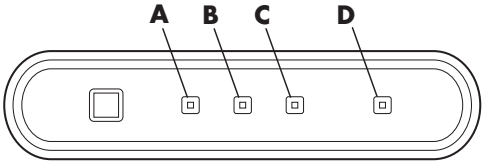
A wireless keyboard (**B**) uses a receiver/transmitter unit (**A**), instead of a connector cable, to communicate with your PC. The wireless keyboard, mouse (**C**), and receiver set is available with select models only.

A Wireless receiver
B Wireless keyboard
C Wireless mouse



A light (**D**) on the receiver indicates receiver activity.

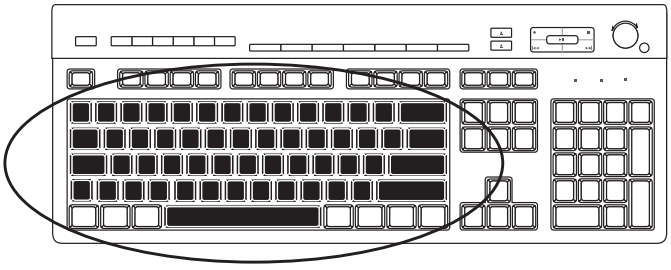
A Number lock on
B Caps lock on
C Scroll lock on
D Receiver activity



If your keyboard does not work properly, refer to "troubleshooting" on page 79.

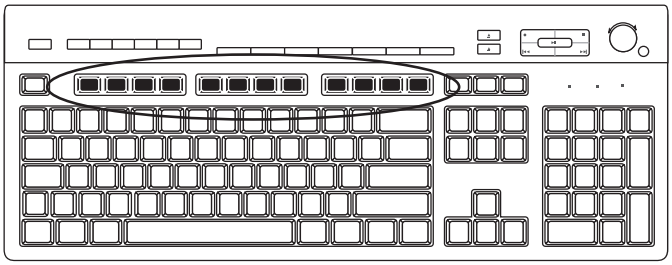
standard keyboard features

alphanumeric keys



The alphanumeric keys are the main keys found on a standard typewriter.

function keys



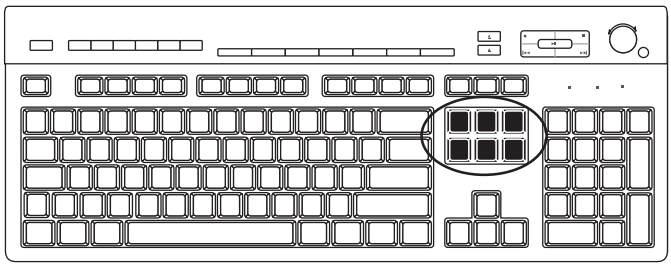
The function keys, located above the main keys, are labeled F1 through F12.

- Pressing F1 displays a Help window for the software program being used.
- Pressing F3 displays a search window.

F1 and F3 are available at all times.

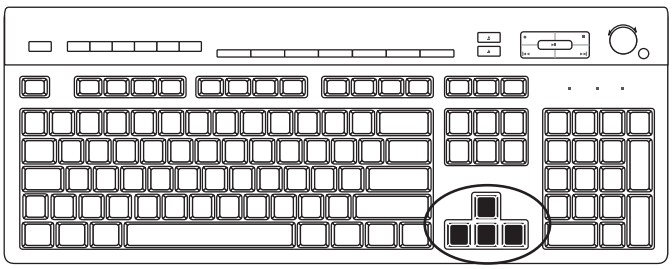
Other function key operations vary by software program.

edit keys



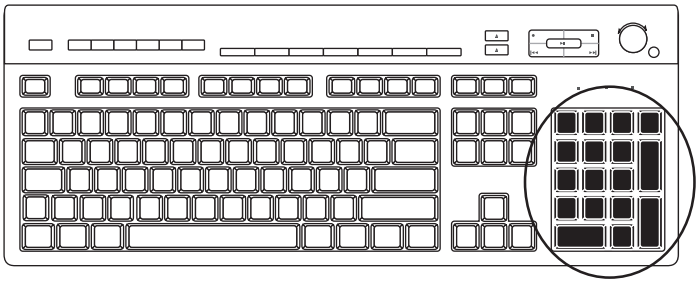
The edit keys are Insert, Home, Page Up, Delete End, and Page Down. Use these keys to insert and delete text and to quickly move the cursor on your screen. They function differently with some software programs.

arrow keys



The arrow keys are controls for up, down, right, and left. You can use these keys instead of the mouse to move the cursor for navigation in a Web page, in a document, or in a game.

numeric keys



Press the Num Lock key to lock and unlock the numeric key functions:

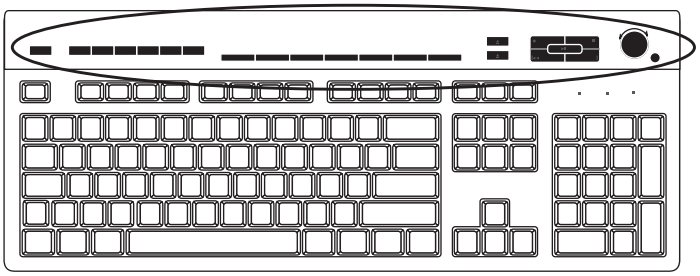
- When the Num Lock light on the keyboard is on, the numeric keys work in the same way as the number keys and arithmetic functions found on a basic calculator.
- When the Num Lock light on the keyboard is off, the numeric keys are directional keys used to move the cursor or play games.

keyboard indicators

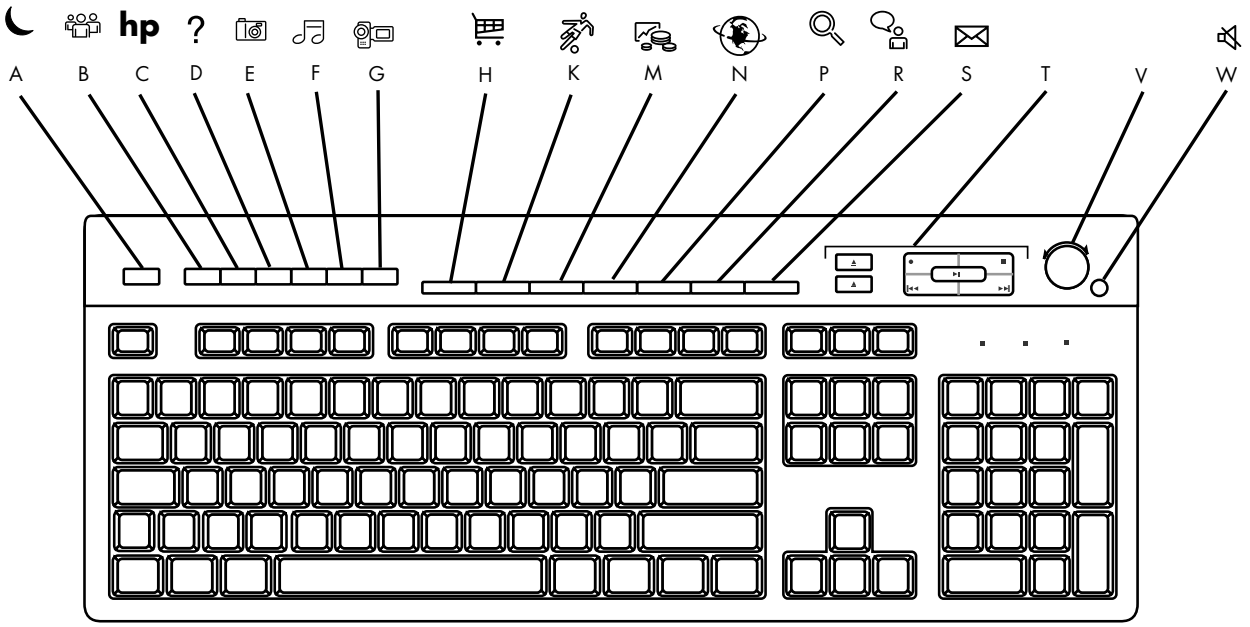
Each keyboard indicator is a light labeled with the name or icon for its status:

Icon	Name	Description
1	Num Lock	Numeric keys are locked as numbers keys and arithmetic functions.
A	Caps Lock	Alphanumeric keys are locked to uppercase.
⇓	Scroll Lock	Scroll function is locked.

special keyboard buttons



There are special buttons (select models only) at the top of the keyboard. (Some models have some of these special buttons on the left side of the main keys.) These buttons operate a CD or DVD player, connect you to the Internet, or provide quick access to specific functions.



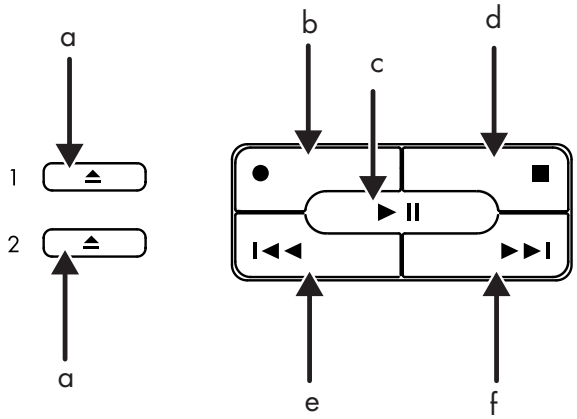
NOTE: The number, location, and labeling of buttons vary by keyboard model.

Figure Key	Icon	Feature	Description
A		Standby	Puts PC into power-saving mode (screen is blank but PC is still on). To make screen reappear, press the Esc key, or press standby again. May take 10–30 seconds before screen reappears.
B		User	Switches between the PC users.
C	**hp**	HP	Links to HP Web site.
D	?	Help	Opens the Help and Support Center.
E		HP Picture Toolkit *Or* My Photo Center *Or* Picture It!	Opens an imaging software program. Can be reconfigured.
F		Music	Starts MusicMatch Jukebox or Windows Media Player. Can be reconfigured.
G		Video	Opens video software program. Can be reconfigured.

H		Shopping	Goes to popular Web sites. Can be reconfigured to open any site or software program.
K		Sports	
M		Finance	
N		Connect	
P		Search	
R		Chat	
S		E-Mail	
T	See figure following table	Media Controls (CD/DVD/MP3)	Operates CD or DVD player.
V		Volume control (Volume knob or Volume Up and Volume Down buttons)	Volume knob: Increases speaker volume when turned clockwise and decreases volume when turned counterclockwise. It can be turned indefinitely, even after maximum sound has been reached. Volume Up and Down buttons: Press the Volume Up ▲ button to increase volume and the Volume Down ▼ button to decrease volume.
W		Mute	Turns speaker sound on and off.

media control keys

a open and close disc tray(s)
b record
c play or pause
d stop
e skip to the previous track
f skip to the next track



NOTE: The number, location, and labeling of buttons vary by keyboard model.

customizing the buttons

You can customize some of the special buttons on the keyboard (select models only) to open different programs or files, or to connect to favorite Web sites:

1. Click **Start** on the taskbar.
2. Choose **Control Panel**.
3. Click **Printers and Other Hardware**, if it is present.
4. Double-click **Keyboard**.
5. On the Buttons tab, double-click the button you want to change.
6. For the Button Configuration, click the down-arrow to the right of the list and choose the button capability, such as *Simple web page with label*.
7. Enter a display label and the address information. For a Web page, enter the URL.
8. Click **OK**.
9. On the Buttons tab, click **Apply**.
10. Repeat steps 5 through 9 for each button you want to customize.
11. Click **OK** when you are done.

NOTE: Clicking the **Restore Defaults** button on the Button tab restores all of the Internet buttons to the factory settings.

---

adjusting the monitor

To change the screen resolution:

1. Right-click an empty area of the desktop and click **Properties**.
2. On the Settings tab, adjust the screen resolution.
   - Moving the slide toward **Less** increases the size of text on your screen.
   - Moving the slide toward **More** decreases the size of text.
3. Click **Apply**.
4. Click **Yes**, if it is present.
5. Click **OK**.

NOTE: You can connect more than one display device (CRT monitor, flat panel monitor, TV, etc.) to the PC (select models only). You can quickly change where the PC desktop appears by pressing Alt+F5. Each time you press the Alt+F5 key combination, the PC display appears on the next device. If Alt+F5 does not work, restart the PC and try again.

---

using a printer

Refer to the user manual that came with your printer for instructions on connecting and using the printer.

Printers receive instructions from your PC via software called *printer drivers*. In many cases your PC automatically finds the necessary printer driver. If it does not, follow instructions that come with your printer to install the specific printer driver that it requires.

You can print text and graphics from most software programs and Internet sites if you have a printer connected to your PC and the necessary software installed for the printer.

To print:

1. Click **File** on the menu bar.
2. Click **Print**.
3. Select your printing options:
   - Select the printer.
   - Choose the page range (for example, all pages, current page, range of pages).
   - Determine the number of copies.
   - Select all, odd, or even pages in a range.
4. Click **OK**.

using the internet

This chapter discusses the Internet, how to use a browser and e-mail, and how to set up your Internet account.

Use the Internet to search for and to find information or services on the Web, or to use an e-mail program to get, read, or send electronic mail messages.

Hardware and software programs provided on your PC may vary. Your PC may come with:

- Access to the ISPs in your area.
- Internet Explorer Web browser.
- Outlook Express e-mail software program.
- 56K modem and modem software (upgrade ready).
- Ethernet connector.
- Special keyboard buttons to access the Internet.

about the internet

The **Internet** is a group of computers that communicate with each other through telephone lines, digital service, or cable lines. Each Internet computer is independent, and its operators choose which files to make available to users of the Internet. To connect your PC to the Internet and use the information and services available there, you need an Internet Service Provider (ISP).

ISPs are businesses that give you access to the Internet, and most of them provide electronic mail service (e-mail). ISPs usually charge a monthly fee for their services. When your PC connects to the Internet, it is actually communicating with the ISP's Internet computer. The ISP verifies your account and then provides you access to the Internet. You use a Web browser program to search, find, and display Web site information. Some ISPs allow you to choose a browser program, while others provide their own browser.

Your connection to an ISP may be through a traditional telephone dial-up modem, a LAN (Local Area Network), cable modem, or DSL (Digital Subscriber Line). (DSL, ADSL, and cable ISPs are not available in all countries/regions.)

The **World Wide Web** (WWW), also called the Web, is a public part of the Internet used by individuals, companies, governments, and organizations. These individuals and groups have created millions of Web pages in support of their activities. A Web page is a file or group of files that a user can access by entering the Web page's file location, or *URL*.

The **URL (Uniform Resource Locator)** identifies a Web site location, typically in the form http://www.name.extension (for example, http://www.hp.com). The URL may include the path to a specific file within that site. Each period, or *dot,* in the URL separates elements within the address. For example, you will see the URL extension *.com* used by companies. When you enter the URL into your browser address box and press the Enter key on your keyboard, the browser contacts that location and displays the Web page for you.

Imagine you are reading a newspaper. On page 1, you may read something like "For more details, see page 3, column 2." You turn the page for more information. A **hyperlink** on a Web page works the same way, except that you click the mouse with your cursor over the link to move to the page or the Web site. The way that a hyperlink links files together is what gives the Web its name, because the Web weaves and connects idea to idea all over the world.

Your **e-mail address** identifies the electronic post office box where people can send you electronic mail. E-mail addresses have the form name@domain.extension. The domain is usually the name of the ISP or organization. The extension usually identifies the type of organization. For example, if your name is Jane Jones and XYZ is your ISP, your e-mail address might be *JaneJones@xyz.com,* with the extension *.com* indicating that XYZ is a business. For information on using e-mail, see "sending and receiving e-mail" on page 35.

setting up your internet account

1. Set up your modem or other Internet connection:
   - If you will be using a modem to connect to the Internet, please refer to the quick setup poster, and to "connecting the modem" on page 8 for instructions.
   - If you will be using a network, high-speed, or broadband connection, refer to "setting up the ethernet connection" on page 9 for instructions.
2. Choose an ISP.

   Before you can connect to the Internet, you must sign up with an Internet Service Provider (ISP). HP has made arrangements with leading ISPs in your area to help you sign up for Internet service (select models only).

3 Connect to your ISP and the Internet.

Use one of these methods:

- Double-click the ISP-provided icon on the desktop.

  Or

- Press the Connect (or Internet) button on the keyboard (select models only).

  Or

- Click **Start,** choose **All Programs**, choose **Online Services**, and click **Internet Explorer**.

Use Easy Internet Sign-up (available on select models only) to sign up for a new or an existing ISP account; see "signing up for a new or an existing isp account using easy internet sign-up" on page 33. The software programs for available ISPs are part of your PC.

The Windows desktop may have a folder called Online Services, which includes icons for accessing various online services. These icons are part of the Windows operating system, but they are not functional in all countries/regions.

signing up for a new or an existing isp account using easy internet sign-up

Using Easy Internet Sign-up (available on select models only) you can:

- Sign up for a new Internet account.
- Set up an existing account.
- Read about Internet access using a LAN (Local Area Network), cable modem, or DSL (Digital Subscriber Line).

If you decide to use a DSL or cable Internet connection, contact your ISP for any specific software and hardware you may need.

To open Easy Internet Sign-up:

Double-click the **Easy Internet Sign-up** icon on the desktop.

Or

1 Click **Start** on the taskbar.
2 Choose **All Programs**. Choose **Online Services**.
3 Click **Easy Internet Sign-up**.

Follow the onscreen instructions.

NOTE: Your modem cable must be connected to the telephone service line in order for Easy Internet Sign-up to find and obtain updated information about services.

NOTE: If you are using MSN or AOL and have questions, refer to the information in Easy Internet Sign-up or contact the ISP directly.

using a browser

A Web browser program searches for, finds, and displays Web site information. How you explore the Internet depends on whether you are using an ISP that provides the browser, or an ISP that allows you to use any browser.

Once you are connected to the Internet, your browser displays the home Web page. You can go to a different Web site by entering its address (such as http://www.hp.com) in the address box in the Web browser and pressing Enter on your keyboard. Or, you can use the browser Search tool to search for references to a specific word or phrase on the Web.

searching the internet

Most browser programs include a search feature. You may need to click a button or select from a menu to display the search feature, depending on the type of browser program. Type a question or a word that describes the information you want to find into the Search box, and then press Enter.

The Windows search feature includes direct use of the Internet Explorer Search. (If your ISP provides the browser, you may not be able to use Internet Explorer to search the Internet.)

To begin a search:

1. Click **Start** on the taskbar.
2. Click **Search**.
3. Click **Search the Internet**. (You may have to scroll down in the list to see this option.)
4. Type a word or question into the Search box.
5. Click **Search**.

The PC connects to the Internet (if needed), performs the search, and displays the results. Click a link in the results list to display the Web page.

There are also Web sites specifically created for searching the Internet. These are called *search engines*.

restricting internet content

The Internet provides you with a wide variety of information, but some information may not be suitable for every viewer. With Content Advisor (a feature of Windows XP), you can:

- Control Internet access.
- Set up a password.
- Set up a list of Web sites that people who use your PC cannot view.
- Adjust the type of content people can view with or without your permission.

Once you set up restricted rating levels in Content Advisor, users can view Web sites and other pages that you have specified under the rating setup. However, to view *unrated* Web sites or pages, they must enter the Content Advisor password that you have set. This means that any unrated page, even Help and Support or Internet Explorer, is not viewable if the user doesn't know the password. To allow access to an unrated site or page you approve of, open it and when the password window appears, select the option *always allow viewing* or *allow viewing only this time*.

To use Content Advisor:

1. Click **Start** on the taskbar, and then click **Control Panel**.
2. Click **Network and Internet Connections**, if it is present.
3. Double-click **Internet Options**.
4. Click the **Content** tab.
5. In the Content Advisor area, click **Enable**.
6. On the Ratings tab, click a category in the list, and then click and drag the slider bar until the rating level is set to the limit you want to use.
7. Repeat step 6 for each category you want to limit.
8. Click **Apply**, and then click **OK**.
9. Type a password into the Password box and the Confirm password box, and then click **OK**.

NOTE: If you want to change the settings after the initial setup, click **Settings** in the Content Adviser area instead of *Enable*. The Enable button works as a toggle to turn the Content Advisor on and off.

---

sending and receiving e-mail

E-mail (electronic mail) allows you to send and receive letters, pictures, postcards, and even music and video clips.

Your PC comes with an e-mail program from Microsoft called Outlook Express (select models only). You may also use e-mail programs from other vendors. Some ISPs provide their own e-mail programs. You use an e-mail program to send, receive, and organize your messages. You can organize, read, and create new messages even when you are off-line (not connected to the Internet).

NOTE: Some models come with Microsoft Outlook instead of Outlook Express. For details on using Microsoft Outlook, open the Outlook program and select Help.

if using outlook express

The first time you start Outlook Express, the Internet Connection Wizard window opens if you are not already connected to the Internet.

The Wizard will ask for connection information such as an account name and password and the names of an incoming and an outgoing mail server. If you need help with any of this information, contact your ISP.

After the first time you sign up and connect through an ISP, you can run Outlook Express from the Start menu.

sending e-mail messages with outlook express

1 Click **Start** on the taskbar, and select the **E-mail Outlook Express** icon.

NOTE: You can also press the E-Mail button on the keyboard to open Outlook Express (select models only).

2 Click the **Create Mail** icon.

3 Type in, or select from an address book, the address of each recipient.

NOTE: E-mail addresses contain no spaces and have a period after the server name. Dashes and underscores are sometimes used. Capital letters may be required.

4 Type your message in the New Message window.

5 Type the message title in the Subject box.

6 Click the **Send** button on the toolbar when you are finished.

7 If necessary, click the **Send/Recv** tool on the toolbar to send any messages stored in the Outbox.

NOTE: When you compose a message without being connected to the Internet, the message is stored in the Outbox until the next time you log on to the Internet and connect to your ISP.

receiving e-mail messages with outlook express

Your ISP receives e-mail messages for you automatically, even when your PC is turned off. The ISP then stores your messages until you connect to the Internet and open your e-mail program to read them.

1. Start Outlook Express.
2. If necessary, click the **Send/Recv** tool on the toolbar to have your e-mail program get the new messages from all listed e-mail accounts.
3. Click the **Inbox** folder to view the list of incoming messages. Messages not yet read appear in bold on the screen.

   NOTE: In Outlook Express, the messages stay in your Inbox until you delete them or move them to another folder.

4. Click a message once to view it, or double-click the message to expand it and read it in its own window.

For more information about using your e-mail program, go to the Help menu within the program.

if your isp provides the e-mail program

Follow the ISP's instructions to install its Web browser and e-mail program and to set up and use your e-mail account. You will then be able to send and receive e-mail when your PC is connected to your ISP.

getting help

help and support center

Information about your PC is in the onscreen Help and Support Center (select models only). Here you can find links to driver updates, access to technical support options, and information about commonly asked questions.

To open the Help and Support Center:

1. Press the **Help** button (select models only) on your keyboard.

   Or

   Click **Start** on the taskbar and choose **Help and Support**.
2. Choose **HP Pavilion PC Help**.

using updates from hp

Updates from HP (select models only) is an Internet-based service provided by HP to bring you important information about your PC:

- Product notices
- System updates
- Tips
- Special offers for your PC

Messages arrive while you're connected to the Internet and may display an alert or a notice on your desktop. View messages as they arrive or read them later.

The Updates from HP Support messages are also available to you through the Support Web site under the information for your PC model. Refer to your *Warranty & Support Guide* for Web site information.

getting messages

After you view or close a message, it will not automatically display again.

To read a previously received message, open Updates from HP:

1. Click **Start** on the taskbar.
2. Chose **All Programs**.
3. Choose **PC Help & Tool**.
4. Choose **Updates from HP**.
5. Click **Updates from HP** again.

Updates from HP opens and lists the message titles. To read a message, double-click the message title in the window. You can close this window, and Updates from HP remains active.

turning off messages

You cannot receive messages, including important Support messages that may be critical to the operation of your PC, while the service is off.

To turn off the Updates from HP Service:

1. Click **Start** on the taskbar.
2. Choose **All Programs**.
3. Choose **PC Help & Tool**.
4. Choose **Updates from HP**.
5. Click **Disable Updates from HP**.

The service is turned off until you re-enable it.

re-enabling messages

When you re-enable the Updates from HP Service, the service runs whenever you are connected to the Internet, and you receive messages as they become available.

To turn on the service:

Double-click the **Re-enable Updates from HP** icon on the desktop.

Or

1. Click **Start** on the taskbar.
2. Choose **All Programs**.
3. Choose **PC Help & Tool**.
4. Choose **Updates from HP**.
5. Click **Re-enable Updates from HP**.

resolving problems

For help on general and miscellaneous problems you may be experiencing, refer to "troubleshooting" on page 79.

upgrading and servicing the pc

Information about the internal parts of the PC chassis is in the chapter "upgrading and servicing the pc." Some model PCs have this servicing information printed as a separate guide and included with the PC.

warranty & support guide

The *Warranty & Support Guide* contains operating specifications for the PC along with regulatory and safety information.

See the *Warranty & Support Guide* included with the PC documentation for:

- Terms of your PC warranty coverage
- License information
- Support contact information

online guides

You can find online guides and information for your PC. To view online manuals for your PC:

1. Type the Support Web address from your *Warranty & Support Guide* into your browser address box, and press the Enter key on your keyboard.
2. In the search box, type your product name and number (*Pavilion 734n*, for example) and click the search arrow. The product number is on the lower front of the PC chassis or inside the CD storage area.
3. Click the manuals item to see a list of manuals for your PC.

NOTE: Online manuals are associated with specific PC model numbers. Some models do not have online manuals.

---

web sites about your pc

Use the Web site addresses listed in the *Warranty & Support Guide* for:

- Information about your PC.
- Your technical support needs.

Type these Web site addresses into the address box of your Internet browser, and then press the Enter key on your keyboard.

microsoft windows xp operating system

For questions about the Microsoft Windows XP operating system, refer to:

- Help and Support. For onscreen help and troubleshooting, click **Start** and then **Help and Support**.
- The Microsoft Windows XP guide, included with your PC documentation.

working with sound, pictures, and video

using speakers

Speakers are included with the monitor (select models only), or are sold separately. For details on connecting stereo speakers to the PC, see the quick setup poster.

NOTE: *Speakers* may be passive (no power button and no power cord) or active (power button or power cord). Your PC supports only active (powered) speaker systems; the speaker system must have its own power cord.

A *stereo speaker set* is a left-right, 2-channel speaker system. A *multi-channel audio speaker system* is a system with more than two channels, and may include a subwoofer. For example, 5.1 channels, referred to as a 6-speaker mode, uses two front speakers (left-right), two rear speakers (left-right), a center speaker, and a subwoofer.

If your PC has multi-channel audio speaker capacity (select models only), you can connect four channels for four speakers output or six channels for 5.1 speakers output.

Connect your speaker system to the PC and then configure the audio software for sound output. Refer to "connecting a multi-channel speaker system to your pc" on page 44.

adjusting speaker volume

Use the Volume icon on the taskbar to set speaker volume. Then you can adjust the volume using:

- The volume knob or buttons on the keyboard (select models only).
- The volume knob on the speakers (select models only).

NOTE: If you do not see this Volume icon on the taskbar, click **Start**, choose **Control Panel**, click **Sounds, Speech, and Audio Devices**, if it is present, and then double-click **Sounds and Audio Devices** to open the Sounds and Audio Devices Properties window. On the Volume tab, place a check in the *Place volume icon in the taskbar* check box. Click **Apply**, and then click **OK**. The Volume icon appears in the taskbar.

The two ways to use the Volume icon are:

1. Click the **Volume** icon on the taskbar.
2. Adjust the volume.
3. When you are satisfied with the sound level, click outside the Volume window to close this window.

Or

1. Double-click the **Volume** icon on the taskbar. The Volume Control settings window opens.
2. Adjust the volume.
3. When you are satisfied with the sound level, click the **Close** box (the **X** in the corner) to close this window.

connecting a multi-channel speaker system to your pc

Multi-channel audio speakers plug into the Audio In, Audio Out, and Mic connectors on the back or front of the PC. Refer to “pc back” on page 5, or “pc front” on page 7 for the location of the connectors.

1. Turn off the PC and the speakers.
2. Connect the three audio cable plugs from the speaker system to the connectors on the back of the PC. (See the following table.)
3. Turn on the PC.
4. Turn on the speaker system.

Connect speaker plugs for:			To PC connector	Connector icon
2 Speaker Mode	**4/4.1 Speaker Mode**	**6/5.1 Speaker Mode**		
Front speakers	Front speakers	Front speakers	Audio Out (lime-green)	OUT
Not used for speakers	Rear speakers	Rear speakers	Audio In (blue)	IN
Not used for speakers	Not used for speakers	Center/ subwoofer speakers	Mic-1 (pink)	

Configure the audio output for the multi-channel speaker system by performing the following procedure.

configuring the multi-channel sound manager

1. Click **Start** on the taskbar.
2. Choose **All Programs**.
3. Choose **Music**.
4. Click **Multi-channel Sound Manager** and then click **Multi-channel Sound Manager** again. The Audio Configuration window opens.

   NOTE: If you do not see the Speaker Configuration tab, your PC does not have the multi-channel capability. However, it still has two-channel (stereo) output.

5. Click the **Speaker Configuration** tab.
6. Select the option describing the number of speakers in your system, for example, **6/5.1 speaker mode**. You can click the **Speaker Test** tab and then click a speaker icon to test it.
7. Click **OK**.

configuring multi-channel audio output for the dvd player

The InterVideo WinDVD™ program (select models only) is set up for two-speaker (stereo) output. To hear all speakers from DVD movies recorded with multi-channel audio, change the audio properties for WinDVD to match your speaker configuration (if your InterVideo WinDVD program supports more than two channels):

1. Insert a DVD, or start InterVideo WinDVD Player (see "playing dvd movies with the intervideo windvd player" on page 58).
2. Right-click anywhere in the WinDVD video window, and then click **Setup**.

3 Click the **Audio** tab.

4 Click the option for the number of speakers to match your multi-channel speaker system, and then click **Apply**.

NOTE: To test the speakers (multi-channel speakers only), click the **Test** button. The WinDVD control panel shows the speaker number being used. Click **Stop**.

5 Click **OK**.

NOTE: If you want to play a stereo DVD, change the audio properties of WinDVD to match the recorded DVD audio output.

using a microphone

Your PC comes with one microphone connector in the back of the PC. Some models have a second microphone connector in the front of the PC. Only one microphone connector works at a time, and the back connector is ready to use unless you have the multi-channel audio speakers option. For PCs with the multi-channel audio speakers option, the microphone connector in the front of the PC, if present, is ready to use. See "using the microphone with multi-channel audio" on page 47.

To use a microphone connected to the front of your PC (select models only), select the working microphone.

NOTE: If you connect your microphone to the back of your PC, you do not need to perform this procedure.

1 Double-click the **Volume** icon on the taskbar. The Volume Control settings window opens.

NOTE: If you do not see this Volume icon, click **Start**, click **Control Panel**, click **Sounds, Speech, and Audio Devices**, if it is present, and then double-click **Sounds and Audio Devices** to open the Sounds and Audio Devices Properties window. On the Volume tab, place a check in the *Place volume icon in the taskbar* check box. Click **Apply**, and then click **OK**. The Volume icon appears in the taskbar.

2 Select **Options** and click **Properties**.

3 In *Adjust volume for*, click **Recording**.

4 In *Show the following volume controls*, place a check in the **Microphone** check box.

5 Click **OK**.

6 Click the **Advanced** button in the Microphone column. If you do not see the Advanced button, select **Options** from the *Recording Control* window, and then click **Advanced Controls**.

7 Place a check in the **Alternate Microphone** check box. (This box may be labeled *Mic2 Select* or *1 Mic Boost*.)

8 Click **Close**.

9 Click **X** (**Close**) on the upper-right corner of the Recording Control window.

adjusting microphone volume

If you need to adjust the volume of the microphone, follow the procedure below:

1 Double-click the **Volume** icon on the taskbar. The Volume Control window opens.

2 Select **Options** and click **Properties**.

3 In *Adjust volume for*, click **Recording**.

4 In *Show the following volume controls*, place a check in the **Microphone** check box.

5 Click **OK**.

6 Adjust the volume for Microphone Balance. If the volume is now acceptable, proceed directly to step 10.

NOTE: If you do not see the Advanced button, select **Options** from the *Recording Control* window, and then click **Advanced Controls**.

---

7 To make finer adjustments to the sound, click the **Advanced** button, and then select the (Microphone) **1 Mic Boost** check box.

8 Click **Close**.

9 Repeat step 6, if needed.

10 Click **X** (**Close**) on the upper-right corner of the Volume Control window.

using the microphone with multi-channel audio

The multi-channel speaker system (select models only) connects to the PC using the Microphone, Audio (Line) In, and Audio (Line) Out connectors on the back of the PC. Your PC may have a second microphone on the front of the PC. If present, this microphone is ready to use and does not affect the use of the multi-channel audio speaker system.

To use the microphone connector on the back of the PC with a multi-channel audio speaker system, you must disconnect the cables for the multi-channel speakers and change the audio configuration to a 2-channel audio system. Refer to "configuring the multi-channel sound manager" on page 45 to set the audio configuration.

working with digital images

You can connect a digital image source, such as a digital camera or a digital video camera, directly to the PC or through a docking station. Digital picture files you copy or download from the device appear in the My Pictures folder. You can copy digital picture files from the memory cards used by digital cameras and other digital imaging devices by using the 7-In-1 memory card reader (select models only). Refer to "about the 7-in-1 memory card reader" on page 50.

using hp image zone

HP Image Zone is an easy-to-use software program for managing your still photos, scanned images, and video clips. It provides all the tools you need for viewing, organizing, editing, printing, sharing and protecting your digital images.

To open HP Image Zone:

- Click the **HP Image Zone** icon on your desktop.

Or

- Click **Start** on the taskbar and click **My Pictures**.

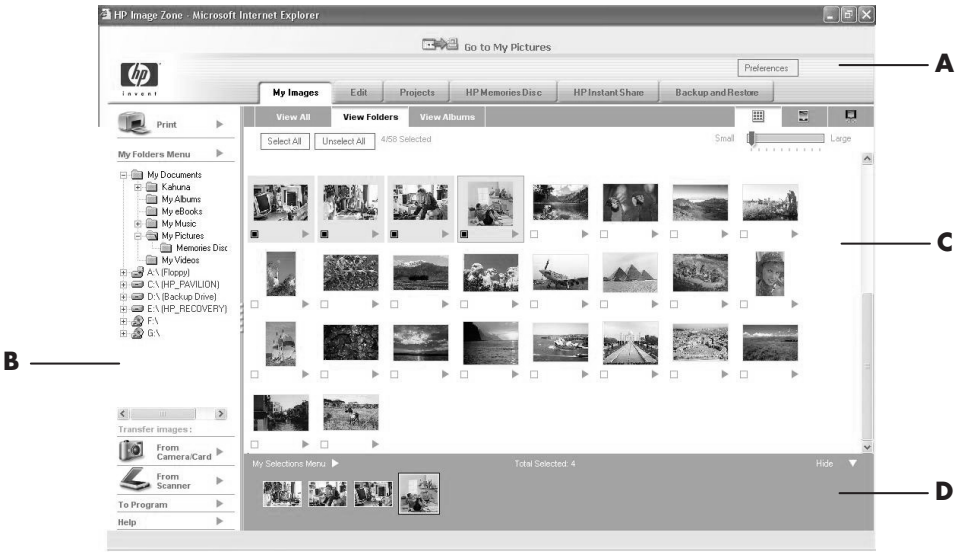
The HP Image Zone window opens.

A Mode tabs, Go to My Pictures button, and Preference button

B Control area with Help link

C Work area, or *Gallery*, showing images on the PC

D Selection tray



Click a tab or button at the top of the gallery window to choose a different work area, as described in the table.

Tab or button	Description
My Images tab	A user-friendly tool in which you can easily find, view, manage, and print single or multiple photos or video clips. From here, you select the images that you want to edit, use in projects, and share with family and friends. For more information, see *manage your images* in Help.
Edit tab	A tool for making changes to the images and video clips you selected in My Images. It provides basic editing features that might be all you need to manipulate your images. For more information, see *edit your images* in Help.
Projects tab	A tool for creating and printing projects using the images you selected in My Images. Projects include photo album pages, cards, and flyers. For more information, see *make creative projects* in Help.
HP Memories Disc tab	A tool for creating multimedia CDs using the images you selected in My Images. You have the option of adding your own audio and text, or allowing the software to add default audio and text. For more information, see *make a multimedia cd* in Help.
HP Instant Share tab	A tool for sharing the images with family and friends. After you select images on the My Images tab, you can post the images to the HP Instant Share website and send a link to the images on the website by e-mail. You can also create online albums if you want to organize your images on the website. If available in your region, you can order professional quality prints from an online service. For more information, see *share your images* in Help.
Backup and Restore	A user-friendly tool that includes tasks for creating backup discs of all the images on your PC and restoring images (either from a backup disc or from an automatically created digital negative).
Preferences button	Use this button to display a dialog box with options for customizing the HP Image Zone, and for changing certain default settings for the tabs.
Go to My Pictures button / HP View button	Use this button to toggle between the HP Image Zone software and the Microsoft My Pictures directory. Clicking My Pictures in the Start Menu will automatically open HP Image Zone unless you use this button to turn it off.

For more information on using the HP Image Zone, click the **Help** link in the control area of the program window.

about the 7-in-1 memory card reader

Digital cameras and other digital imaging devices use memory cards, or *media*, to store digital picture files. The optional 7-In-1 memory card reader (select models only) can read and can write to six types of memory cards and the IBM Microdrive disk drive.

The card reader is accessible on the front of the PC or located inside the front cover of the PC. It has two or four horizontal card slots which accept the memory cards and the microdrive disk drive.

Card	4-slot Reader	2-slot Reader
CompactFlash™ type I media	Lower left slot	Upper slot
CompactFlash type II media	Lower left slot	Upper slot
IBM Microdrive disk drive	Lower left slot	Upper slot
Secure Digital (SD) Memory Card	Upper right slot	Lower slot
MultiMediaCard (MMC)	Upper right slot	Lower slot
Memory Stick® (MS) Memory Card	Lower right slot	Lower slot
SmartMedia™ (SM) Memory Card	Upper left slot	Lower slot

You can place media in one or more of the card slots and use each media independently. Place only one piece of media in a slot at one time.

Each card slot has its own drive letter and icon. When you insert media, the display label may change to the title of the media, if the title is present.

special note about the safely remove hardware utility

CAUTION: Do not click *Stop* in the Safely Remove Hardware window with the USB Mass Storage Device selected. Doing so removes the operating system recognition of the 7-In-1 memory card reader from your PC; you must restart the PC to see your memory card reader again.

If you open the Safely Remove Hardware window by mistake, click **Close**.

using the 7-in-1 memory card reader

NOTE: CompactFlash and Microdrive are keyed and cannot be inserted incorrectly. Insert the receptacle edge (holes) of this media into the slot.

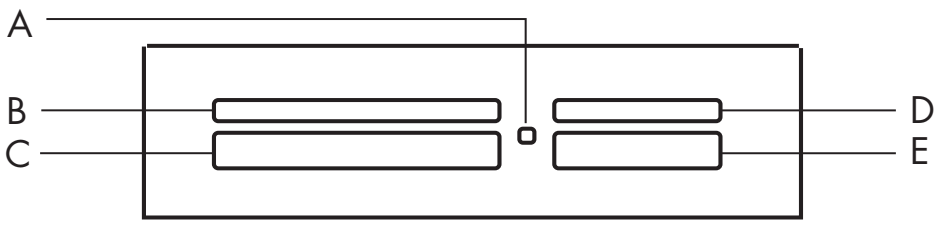
For the two-slot reader, the Secure Digital (SD) card, the MultiMediaCard (MMC), and the Memory Stick (MS) card must be inserted upside down (gold connector fingers facing up). Note the direction of the notched corner on the media.

1. Insert the media into the card slot until it stops. The in-use light (**A**) on the card reader lights, and the PC automatically detects the media.
2. The PC opens a window so you can use the media contents. You can copy files from or to the media.
3. When you are done, right-click the drive icon, select **Eject**, check that the in-use light is on but not blinking, and then remove the media. A steady light indicates that the PC is not reading or writing the media.

WARNING: Do not try to remove media when the In-use light is blinking. Doing so may cause loss of data.

4-slot memory card reader

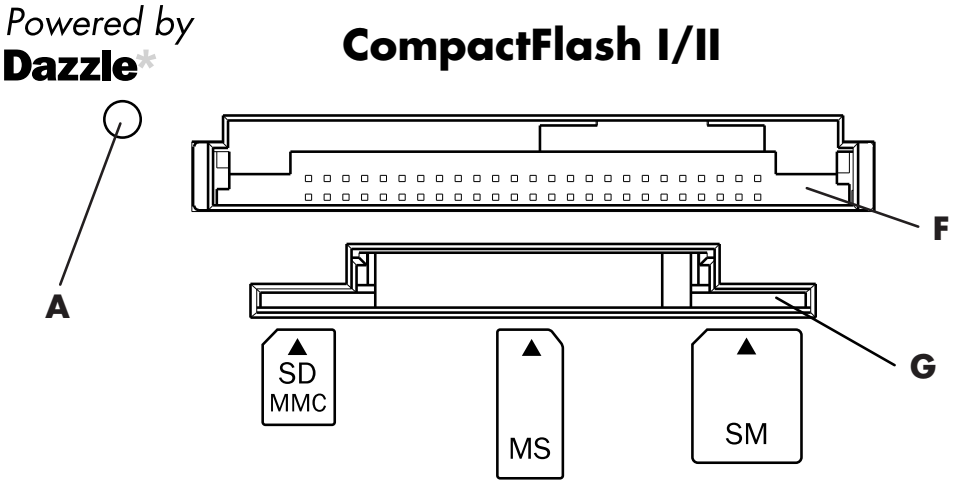
A In-use light
B Upper left slot
C Lower left slot
D Upper right slot
E Lower right slot



Card	Insert	Into 4-slot reader
CompactFlash type I media	Receptacle edge (holes)	**C** (lower left)
CompactFlash type II media	Receptacle edge (holes)	**C** (lower left)
IBM Microdrive disk drive	Receptacle edge (holes)	**C** (lower left)
Secure Digital (SD) Memory Card	Facing up	**D** (upper right)
MultiMediaCard (MMC)	Facing up	**D** (upper right)
Memory Stick (MS) Memory Card	Facing up	**E** (lower right)
SmartMedia (SM) Memory Card	Facing up	**B** (upper left)

A In-use light
F Upper slot
G Lower slot

2-slot memory card reader



Card	Insert	Into 2-slot reader
CompactFlash type I media	Receptacle edge (holes)	**F** (upper)
CompactFlash type II media	Receptacle edge (holes)	**F** (upper)
IBM Microdrive disk drive	Receptacle edge (holes)	**F** (upper)
Secure Digital (SD) Memory Card	Upside down (gold connector fingers up)	**G** (lower)
MultiMediaCard (MMC)	Upside down (gold connector fingers up)	**G** (lower)
Memory Stick (MS) Memory Card	Upside down (gold connector fingers up)	**G** (lower)
SmartMedia (SM) Memory Card	Facing up	**G** (lower)

using your cd, dvd, and diskette drives

your drive options

Your PC has one or more of the following drives:

Drive	What it does
CD-ROM	Reads audio and data CD discs.
CD-RW or "cd writer"	Reads and records (burns) audio and data CD discs.
DVD-ROM	Reads audio and data CD and DVD discs.
DVD+RW/+R or "dvd writer"	Reads and records (burns) audio and data CD and DVD discs.
Combination Drive or Combo drive	Combines the functions of two drives into one. There are two versions: • A DVD Writer drive and a CD-RW drive *Or* • A DVD-ROM drive and a CD-RW drive
Diskette (floppy)	Reads and writes to a 3.5" diskette (floppy disk).

handling cds/dvds

To avoid damaging a disc, follow these guidelines:

- Return the disc to the case when you are finished using it.
- Handle the disc by its outside edges or center hole only.
- Do not touch the unlabeled side of a disc or place the unlabeled side down on your desk. Doing so could scratch the surface of the disc.
- Store discs at room temperature.

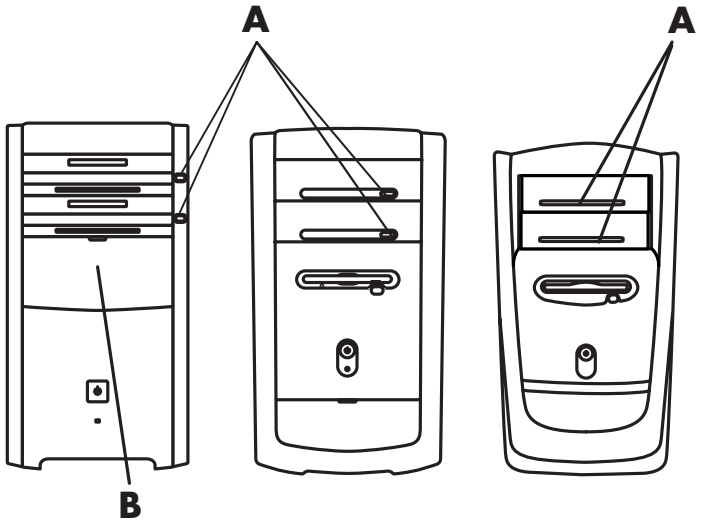
inserting and removing cds and dvds

CAUTION: Use only standard shaped discs in your drives. Using non-standard discs, such as heart-shaped discs or business card discs, may damage your drive.

To insert a CD or DVD:

1 With your PC turned on, press the Eject button (**A**) near the drive to open the disc tray.

A Eject button
B Door

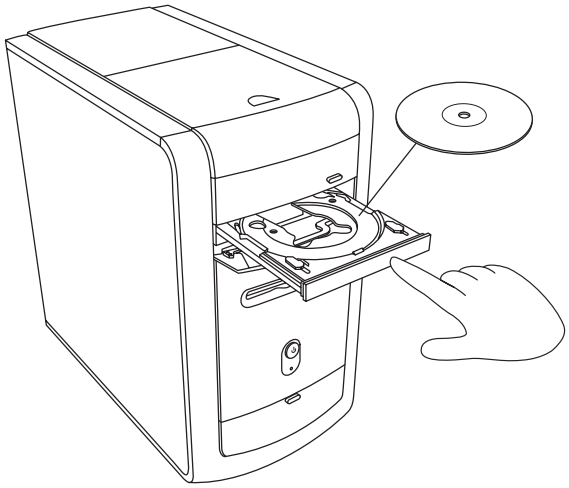


NOTE: On some PCs, the drive is located behind a door (**B**) on the front of the PC.

2 Remove the CD/DVD from its case, holding the disc edges only.

3 Gently place the disc in the tray with the label facing up.

NOTE: On a double-sided DVD, read the text around the inner hole of the disc to determine which side (A versus B or Standard versus Widescreen) to play. Place the disc in the tray with the label facing up for the side you want to play.



4 Close the disc tray by:

- Gently pushing the tray into the PC.

Or

- Clicking the close/open button on the control panel for the program (such as MusicMatch Jukebox or Windows Media Player) that controls the drive.

Or

- Pressing the media control open/close button or Eject button on the keyboard (select models only).

Or

- Pressing the Eject button on the drive, if it is accessible.

To remove a CD or DVD:

1 With the PC turned on, open the disc tray by pressing the Eject button.

NOTE: You cannot eject the disc tray when the PC is off.

2 Holding on to the disc edges or center hole only, lift the CD or DVD out of the tray.

3 Place the disc in its case.

4 Close the disc tray by gently pushing the tray into the PC.

using the combo drive

The combination drive is available on select models only. It combines the functions of two drives into one: either a DVD+RW/+R drive (dvd writer) and a CD-RW drive, or a DVD-ROM drive and a CD-RW drive.

using the diskette (floppy) drive

The diskette (floppy) drive is available on select model PCs. If your PC does not already have a diskette drive, you cannot add one to the PC chassis as an internal drive. Instead, purchase an external USB diskette drive or other external storage device to suit your needs.

If your PC has a diskette (floppy) drive (select models only), you can use a 3.5" diskette (floppy disk) to store files:

1. Insert the diskette with the round metal disk facing down and the arrow on the top pointing into the drive.
2. Gently push the diskette into the drive until it locks in place.
3. You can copy files from or to the diskette. Refer to the Windows Explorer section of Windows Help for instructions on copying files to and from a diskette.
4. When you are ready to remove the diskette, check that the light on the drive is off. This indicates that the PC is not writing to the diskette.
5. Press the Eject button on the PC to remove the diskette. Remove the diskette from the drive prior to turning off the PC.

CAUTION: Removing a diskette when the drive is reading from or writing to the diskette can damage the diskette or the information stored on it.

playing cds and dvds

Your PC includes software that lets you:

- Play music CDs by using either MusicMatch Jukebox (select models) on page 57 or Windows Media Player on page 57.
- Play DVDs by using either Windows Media Player on page 57 or InterVideo WinDVD Player (select models) on page 58.
- Play Video CDs on page 61.

playing music cds with musicmatch jukebox

MusicMatch Jukebox lets you:

- Play music CDs.
- Record digital music files to your hard disk drive.
- Create music CDs by using your CD-RW drive.
- Organize your digital music into libraries.
- Listen to music over the Internet.

If you are connected to the Internet when playing a music CD, MusicMatch Jukebox searches a CD database on the Internet, displays the song titles in the Playlist area, and then begins playing the CD. The next time you play this CD, you don't need to be connected to the Internet — MusicMatch Jukebox displays the song titles from memory.

To play a music CD:

1. Insert the music CD into the drive.
   - The MusicMatch Jukebox window opens. If the Audio CD wizard window opens, select **MusicMatch Jukebox** from the list. You may have to scroll down in the window to see MusicMatch.

   Or

   - If the MusicMatch window does not automatically open, click **Start** on the taskbar, choose **All Programs**, choose **Music**, choose **MusicMatch** and then click **MusicMatch Jukebox**.
2. To control the CD in the drive, click the **CD** tab at the top of the MusicMatch Jukebox window. To play a particular song, double-click its song title (or track number) in the Playlist. You can also control the CD by using the keyboard media control buttons (select models only).

For more information on this software, click the **Help** menu in the MusicMatch Jukebox menu bar.

playing cds and dvds with windows media player

You can play audio CDs or movie DVDs using this software. Your PC must have a DVD drive to play DVD movies. You can use Windows Media Player to:

- Record digital music files to your hard disk drive.
- Create music CDs by using your CD-RW drive (select models) or DVD+RW/+R drive (select models).
- Organize your digital music into libraries.
- Listen to music or view a music video over the Internet.
- Play DVD movies (if your PC has a DVD drive).

To play a music CD:

1. Insert the music CD into the drive.
   - The Windows Media Player window opens. If the Audio CD wizard window opens, select **Windows Media Player** from the list. You may have to scroll down in the window to see Windows Media Player.

   Or

   - If the Windows Media Player window does not automatically open, click **Start** on the taskbar, choose **All Programs**, and then click **Windows Media Player**.
2. To play the CD, click the buttons in the Windows Media Player window. To play a particular song, double-click its song title (or track number) in the Playlist. You can also control the CD by using the media control buttons on the keyboard (select models).
3. When you click the **Media Guide** or the **Radio Tuner** features, Windows Media Player connects to the Internet and obtains information about the CD selections or streaming radio stations.

For more information on this software, refer to the online Help within the Windows Media Player: Click the **Help** menu in the Windows Media Player menu bar. If necessary, first display the menu bar by clicking the up-arrow icon in the upper left corner of the Windows Media Player window.

playing dvd movies with the intervideo windvd player

The InterVideo WinDVD Player program uses a DVD drive (select models only) to run software from CDs or DVDs, play music CDs, and play DVD movies.

You can also use Windows Media Player and a DVD drive to play DVD movies; refer to "playing cds and dvds with windows media player" on page 57.

NOTE: Most DVD movies are localized to geographical countries/regions. For information about this, see "using country/region codes" on page 61.

dvd terms

Title: Each DVD can hold one or more *titles*. Most full-length movies have only one title on the DVD, but some DVDs include several short movies, with each movie being a separate title.

Chapter: Each title is divided into multiple *chapters*. A chapter is a particular segment or scene in the movie. When watching a DVD movie, you have the ability to jump to the next chapter, the previous chapter, or to a specific chapter.

Frame: A single image in a movie is called a *frame*.

To start InterVideo WinDVD Player:

1 Insert the disc into the DVD drive.

NOTE: On a double-sided DVD, read the text around the inner hole of the disc to determine which side (A versus B or Standard versus Widescreen) to play. Place the disc in the tray with the label facing up for the side you want to play.

2 Close the disc tray by gently pushing the tray into the PC.

The movie plays in its own resizable video window, and the WinDVD control panel appears.

Or

If the program does not automatically open:

1 Click **Start**.

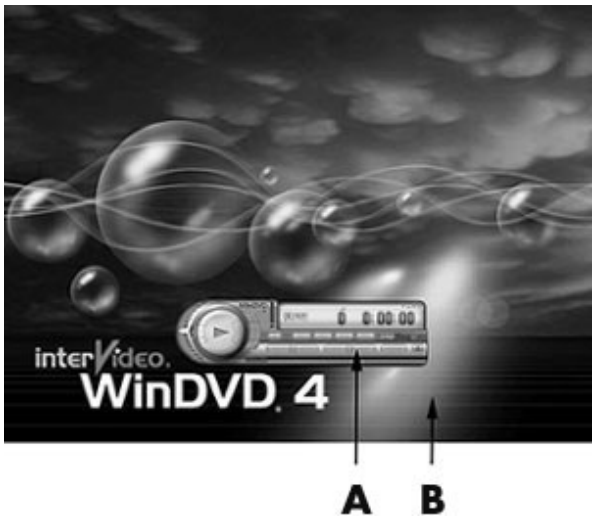
2 Choose **All Programs**.

3 Choose **Video**.

4 Choose **InterVideo WinDVD Player**.

5 Click **InterVideo WinDVD 4**.

A Control Panel
B Video window



You may want to start WinDVD and adjust the settings before inserting the disc and starting the movie. To start WinDVD without a disc in the drive:

1. Click **Start** on the taskbar.
2. Choose **All Programs**.
3. Choose **Video**.
4. Click **InterVideo WinDVD Player**.
5. Click **InterVideo WinDVD 4**.

   The WinDVD video window and control panel opens.

NOTE: If you are playing a movie full screen and the WinDVD control panel is hidden, you can redisplay it by clicking anywhere in the video window.

To use the WinDVD control panel:

- To see what a button does on the control panel, place the mouse pointer on the button; the button title appears onscreen.
- To move the WinDVD control panel, place the mouse pointer on the panel (but not on a button), and drag it to the desired location on the screen.
- To resize the video window when it is not full screen, place the mouse pointer on a window corner and drag the border.

  Or

  Click the **Full Screen** button in the upper-right corner of the WinDVD control panel.
- For information on the InterVideo WinDVD software, refer to the online Help within the program by clicking the **?** (question mark) icon in the WinDVD control panel.

using country/region codes

Most DVD discs have country/region codes embedded in the disc data that limit where the DVD movie can be played.

The country/region number is usually placed over a world globe printed on the DVD packaging and disc. DVDs without country/region codes will play on any player or drive in any country/region.

WARNING: You can change countries/regions only five times before the country/region code locks and becomes permanent. Once the code locks, you can play DVDs from that country/region only. If the country/region code locks, and you need help, contact Support.

The six major DVD countries/regions are:

- Country/Region 1: North America
- Country/Region 2: Japan, Europe, Middle East, South Africa
- Country/Region 3: Southeast Asia
- Country/Region 4: Australia, New Zealand, Mexico, Central and South America
- Country/Region 5: Northwest Asia, North Africa
- Country/Region 6: China

WinDVD is not pre-set to a particular country/region — the country/region code of the first DVD movie you play determines your DVD country/region.

For example, if you play a DVD with a country/region 1 code, WinDVD sets the current country/region of your DVD player to 1. If you later play a DVD that is coded for a different country/region, WinDVD asks if you want to set this as the current country/region.

playing video cds

You can play MPEG (Motion Picture Experts Group) videos. These MPEG-1 files have a .dat or .mpg extension.

To play a Video CD, insert the CD into a CD drive or a DVD drive, and use either Windows Media Player or InterVideo WinDVD Player program. Refer to "playing cds and dvds with windows media player" on page 57, or to "playing dvd movies with the intervideo windvd player" on page 58.

NOTE: The InterVideo WinDVD Player program is included only with PC models that have a DVD drive.

If you have a dual-language Video CD, you must select the language you want to hear, or both languages play at the same time. The sound of one language comes from the left channel (speaker) and the other language comes from the right channel. You select the language by adjusting the balance of the speaker volume to hear only one channel. After playing the Video CD, to hear sound from both speakers again, return the Volume Control Balance to the center.

To select a language in InterVideo WinDVD Player:

1. Insert the Video CD into your CD or DVD drive.
2. Click **Start**, choose **All Programs**, **Video**, choose **InterVideo WinDVD Player**, and then click **InterVideo WinDVD 4**. The WinDVD control panel opens and your Video CD plays in the video window.

3 Double-click the **Volume** icon on the taskbar.

4 Under *Volume Control Balance*, move the slider bar all the way to the right or to the left, depending on which language you want to hear.

5 Close the Volume Control window.

After playing the Video CD, to hear sound from both speakers again, double-click the **Volume** icon on the taskbar and then move the *Balance* slider bar back to the center.

To select a language in Windows Media Player:

1 Insert the Video CD into your CD or DVD drive.

2 Click **Start**, choose **All Programs**, and then click **Windows Media Player**. The Windows Media Player main window opens.

3 Click **File** on the menu bar at the top, and then click **Open**. (If you do not see the menu bar, click the small circle with the up/down arrows that is in the upper-left corner of the main window.)

4 Click the drop-down arrow next to the *Look In* window, and then select the drive that has the Video CD.

5 Double-click the **MPEGAV** folder. If nothing appears in the folder, select **Any File (*.*)** from the *Files of type* drop-down list.

6 Select the file, and then click **Open**. Your Video CD begins playing.

7 Double-click the **Volume** icon on the taskbar.

8 Under *Volume Control Balance*, move the slider bar all the way to the right or to the left, depending on which language you want to hear.

9 Close the Volume Control window.

After playing the Video CD, to hear sound from both speakers again, double-click the **Volume** icon on the taskbar and then move the Balance slider bar back to the center.

creating (burning) cds with recordnow!

NOTE: HP supports lawful use of technology and does not endorse or encourage the use of our products for purposes other than those permitted by national copyright law.

If your PC has a CD-RW or DVD Writer (select models only), your PC has recording software and you can make your own music or data CDs.

Use a CD-R disc if you are going to play the disc in a CD player, CD-ROM, CD-RW, DVD-ROM, or DVD+RW/+R drive. CD-R discs are compatible with more players than CD-RW discs are.

NOTE: For more information about recording CDs, refer to the Help menu in the RecordNow! software program.

getting started with recordnow!

NOTE: The CD-RW or DVD Writer drive is available on select models only.

1. Click **Start** on the taskbar.
2. Choose **All Programs**.
3. Choose **CD (DVD) Recorder**.
4. Click **RecordNow!**, and then click **RecordNow!** again.

   NOTE: Previously recorded files on CD-RW discs must be erased before recording music files. CD-R discs cannot be erased.

5. If you need to erase a disc (CD-RW, DVD+RW, DVD+R): insert the disc, click the **Data Projects** tab at the top of the RecordNow! window, and then click **Erase Disc** to remove previously recorded files from the disc.

   Continue by following the steps under "creating a music cd" on page 63, or "creating a data cd" on page 64.

creating a music cd

RecordNow! creates *closed session* music CDs, which means you must record all music files on one CD in one recording session. Music files can be recorded repeatedly on a rewriteable CD-RW disc, but all previously recorded files must be erased first. CD-R discs cannot be erased. See "getting started with recordnow!" on page 63.

NOTE: CD-R discs play in most home and car stereos. CD-RW discs play only in some stereos.

To record a CD-R or CD-RW disc:

1. Open RecordNow!, and if necessary erase the CD-RW disc; see "getting started with recordnow!" on page 63.
2. Click the **Audio Projects** tab at the top of the RecordNow! window.
3. Click a project option:
   - **Audio CD for Car or Home CD Player**
   - **Exact Copy**
   - **Jukebox CD**
4. Follow the onscreen instructions to finish recording your disc.

creating a data cd

Use RecordNow! to copy a data disc or to copy personal data files from your hard disk drive. Insert a blank or an appendable disc to copy to.

To create a data CD:

1. Open RecordNow!, and if necessary erase all files from the disc; see "getting started with recordnow!" on page 63.
2. Click the **Data Projects** tab at the top of the RecordNow! window.
3. Select a project option:
   - **Data Disc**
   - **Exact Copy**
   - **Erase Disc**
4. Follow the onscreen instructions to finish.

You can add new data files to a CD-R or CD-RW disc in a later recording session if disc space is available. You can also update previously recorded files that have the same name as your new data files on your CD-RW disc.

creating (burning) music cds with windows media player

NOTE: HP supports lawful use of technology and does not endorse or encourage the use of our products for purposes other than those permitted by national copyright law.

Your PC has recording software called Windows Media Player. You copy or download music to the Windows Media Player Media Library and can then organize or copy the music files. You can copy Window Media files that have a .wma extension, .mp3 files, or .wav files to a CD by using a CD-RW drive or a DVD Writer drive. You can also use Windows Media Player to copy music files to a portable device or memory card.

Use a CD-R disc if you are going to play the disc in a CD player, CD-ROM, CD-RW, DVD-ROM, or DVD+RW/+R drive. CD-R discs are compatible with more players than CD-RW discs are.

To create a music CD using Windows Media Player:

1. Click **Start** on the taskbar, choose **All Programs**, and then click **Windows Media Player**.
2. Click **Copy to CD or Device**.
3. Follow the onscreen instructions to select the music files and the CD or device.

For more information on this software, refer to the online Help within the Windows Media Player: Click the **Help** menu in the Windows Media Player menu bar. If necessary, first display the menu bar by clicking the up-arrow icon in the upper left corner of the Windows Media Player window.

creating (burning) data cds using windows xp program

Your PC has recording software to record data files, such as text files or digital pictures, onto CDs.

1. Click **Start** on the taskbar and choose **My Documents** or the folder that has the files you want to copy.
2. Select the file or files you want to copy.
3. Click **Copy to CD** in the *Tasks* list.
4. Click **My Computer** in the *Other Places* list and then double-click the disc drive you want to use.
5. Insert a blank disc into the drive.
6. Click **Write these files to CD** in the *CD Writing Tasks* list. The CD Writing Wizard window appears.
7. Click **Next**.
8. Click **Finish**.

creating (burning) dvds using the dvd writer drive

The DVD Writer drive (select models only) plays movie DVDs and music CDs, reads data CDs and DVDs, and records (burns) files to DVD+RW, DVD+R, CD-R, and CD-RW discs.

NOTE: There are two types of DVD discs: DVD+RW/+R and DVD-R/-RW. DVD-R and DVD-RW discs do not work in the DVD Writer drive.

For steps to view a movie, see "playing dvd movies with the intervideo windvd player" on page 58.

The guide for this drive is printed and included in the PC box (select models).

using a tv as a monitor

Your PC may have TV-out (select models only) capability, which means you can connect it to a television to view the computer image on a TV screen. With the TV-out feature, you can view the computer image, watch DVD movies (if you have a DVD player), or play games on your TV.

cables you may need

To connect a TV to the PC, you may need a video cable and an audio cable (not provided, purchase separately). The type of video cable you need depends on your TV:

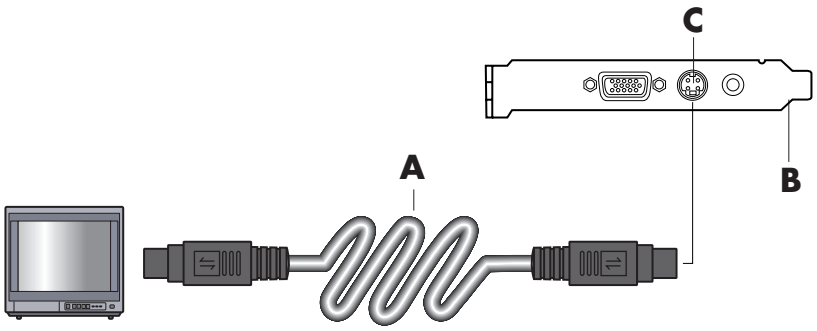
- If your TV has an S-video jack, you need an S-video cable.
- If your TV has a composite video jack, you need a composite video cable and, depending on the jacks on the back of your PC, you may also need an S-video adapter cable.

connecting to a tv set

To use your TV as a PC screen:

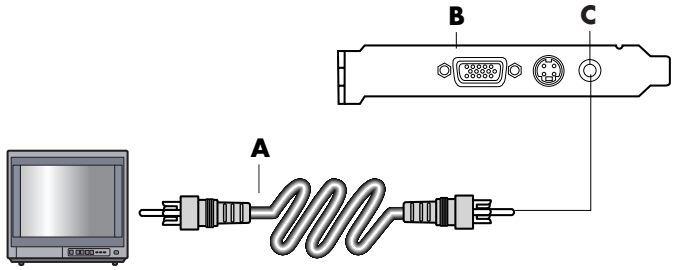
1. Turn off the PC.
2. Connect the TV cable using one of the following arrangements, depending on the connection jacks on your TV:
   - If your TV has an S-video jack, connect an S-video cable from the S-video In jack on the TV to the S-video jack on the back of the PC.

A S-video cable
B Back of PC
C S-video jack



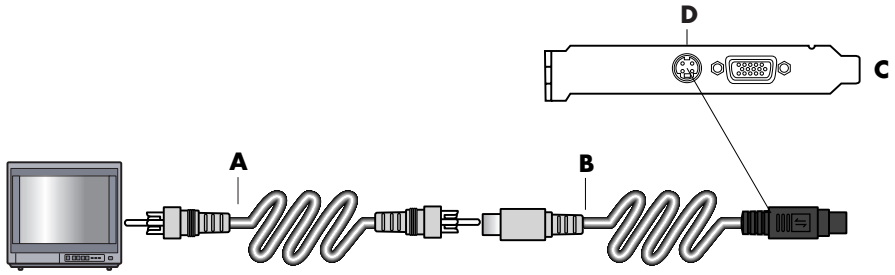
- If your TV has a composite video jack and your PC has a composite video jack, connect a composite video cable to the Video In jack on the TV to the composite video jack on the back of the PC.

A Composite video cable
B Back of PC
C Composite video jack



- If your TV has a composite video jack and your PC has only an S-video jack, connect a composite video cable to the Video In jack on the TV and to an S-video adapter cable. Connect the S-video adapter cable to the S-video jack on the back of the PC.

A Composite video cable
B S-video adapter cable
C Back of PC
D S-video jack



NOTE: The S-video adapter cable is only needed if there is no composite video jack on the back of the PC.

3 To have sound come from your TV instead of from your PC, plug an audio cable into the Audio input jack (Line In) on the TV and plug the other end of the audio cable into the Audio Out jack (green connector) on the back of the PC.

viewing the pc image on your tv screen

NOTE: The type of video card on your PC determines how the PC selects the TV-out option. Some options and menus in this procedure may be different for your PC.

1. Make sure the video and audio cables are connected before you turn on the TV and the PC.
2. Turn on the TV. Press the Video/TV button on your remote control to select the Video setting, not the TV setting.
3. Turn on your PC.
4. When the Windows desktop appears, right-click an empty area of the desktop and choose **Properties**.
5. Click the **Settings** tab.
6. Click the **Advanced** button.
7. Click the **nView** tab, if available, and in the area *nView Display Mode* select **Clone** to view the computer image on your PC monitor and your TV simultaneously.

   NOTE: You can view the PC image on just the TV. In the area nView Display Mode, select **Standard [Dualview]**, click the **Device Settings** button, choose **Select Output Device**, and then select the **TV** option.

8. Click the **OK** button, and then click **OK** again.
9. When the PC image appears on the TV screen, click **Yes** to keep the setting. You have 15 seconds to accept this new setting before it reverts to the previous setting.

NOTE: Some PC models can connect more than one display device (CRT monitor, flat panel monitor, TV, etc.) to the PC. You can quickly change where the PC desktop appears by pressing Alt+F5. (Press the Alt key and the F5 key on the keyboard at the same time.) Each time you press the Alt+F5 key combination, the PC desktop appears on the next device. If Alt+F5 does not work, restart the PC and try again.

disabling the tv option

When you want to disconnect the TV from your PC, you may need to disable the TV option to return your PC display to its original resolution.

1. Right-click an empty area of the screen, and chose **Properties**.
2. Click the **Settings** tab.
3. Click the **Advanced** button.
4. Click the **nView** tab, click the *nView Display Mode* in the list on the left, and then select the **Standard [Dualview]** option.

CAUTION: If you viewed the PC image on just the TV, do the following: With *Standard [Dualview]* selected in the area nView Display Mode, click the *Device Settings* button, choose *Select Output Device*, and then select the *Analog Display* option.

5 Click the **OK** button, and then click **OK** again.

6 When the PC image appears on the monitor screen, click **Yes** to keep the setting. You have 15 seconds to accept this new setting before it reverts to the previous setting.

disconnecting the tv

1 Disable the TV option. See the previous procedure.

2 Turn off the TV and the PC.

3 Remove the video cable from the TV and the PC.

4 Remove the audio cable from the TV and the PC.

5 Reconnect your PC speaker cable to the Line Out jack (lime green connector) on the back of the computer.

using your multi-storage bay

Your PC may have a multi-storage bay (select models only) on the top of the PC chassis. You can use it to:

- Store CDs and DVDs or store memory cards.
- Dock a peripheral device in the bay, such as a digital camera docking station.
- Place a peripheral on the top of the chassis.
- Install the special cover and the DockSpot camera station (sold separately).

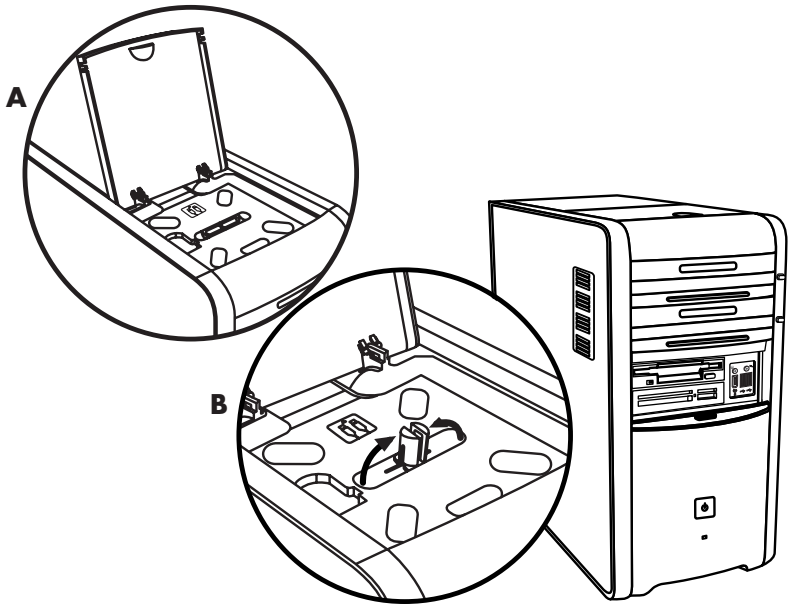
The bay design allows you to place a device and thread the USB or FireWire (IEEE 1394) data cable and the power cord underneath the rear top cover to the connectors on the back of the PC.

Your PC may look different from the one shown here. Component, connector location, type, and number vary by model.

storing cds, dvds, or memory

To store CDs and DVDs, open the bay cover (**A**) and gently lift the two sections to form the spindle (**B**). You can store up to ten discs.

To store memory cards, open the top cover and, if necessary, lower the two spindle sections (**A**).

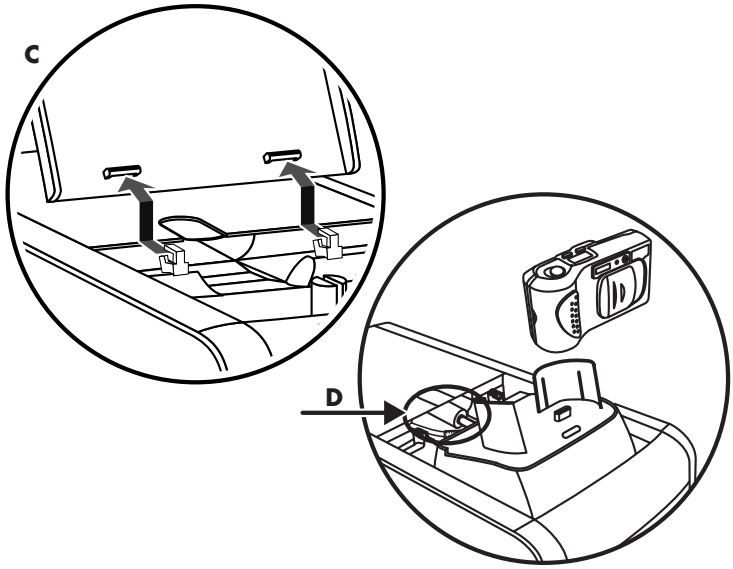


docking a peripheral device

To use the multi-storage bay for a peripheral device, do the following:

1. Open the bay cover (**A**). Hold the cover on each side near the hinges, and then lift the cover and slide it toward the back of the chassis (**C**). Gently lift it off.
2. Thread the cables through the cable tunnel opening at the back of the bay (**D**). Connect data and power cables to the peripheral device, and place the peripheral in the bay.

3 Connect the data cable to the USB or FireWire (IEEE 1394) connector on the back of the PC. Plug the power cord for the peripheral device into a power outlet.



placing a peripheral device on the multi-storage bay (top)

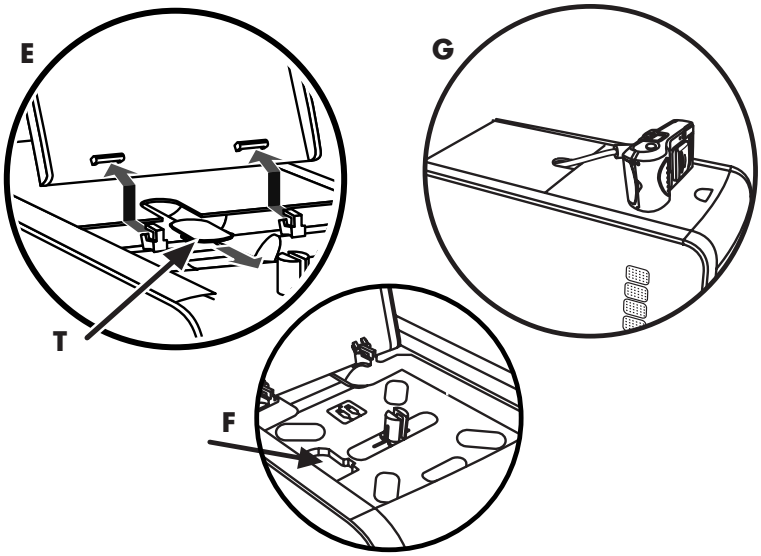
To use the chassis top to place a peripheral device, do the following:

1 Open the bay cover (**A**). Hold the cover on each side near the hinges, then lift the cover and slide it toward the back of the chassis (**C**). Gently lift it off.

2 Grasp the tab (**T**) and pull it out toward the front of the chassis (**E**). Put the tab in its storage area in the bay near the spindle (**F**).

3 Thread the data and power cables for the device through the cable tunnel opening at the back of the bay. Place the cables in the tab opening and replace the bay cover. Close the cover.

4 Connect the cables to the device and place it on top of the chassis (**G**). Connect the data cable to the USB or FireWire (IEEE 1394) connector on the back of the PC. Plug the power cord for the peripheral device into a power outlet.



using the optional camera station pc top

Your PC chassis may include the optional camera station feature. This feature lets you install a special bay cover on the PC chassis for using the DockSpot camera station (sold separately). The DockSpot includes instructions and cables.

This topic describes how to:

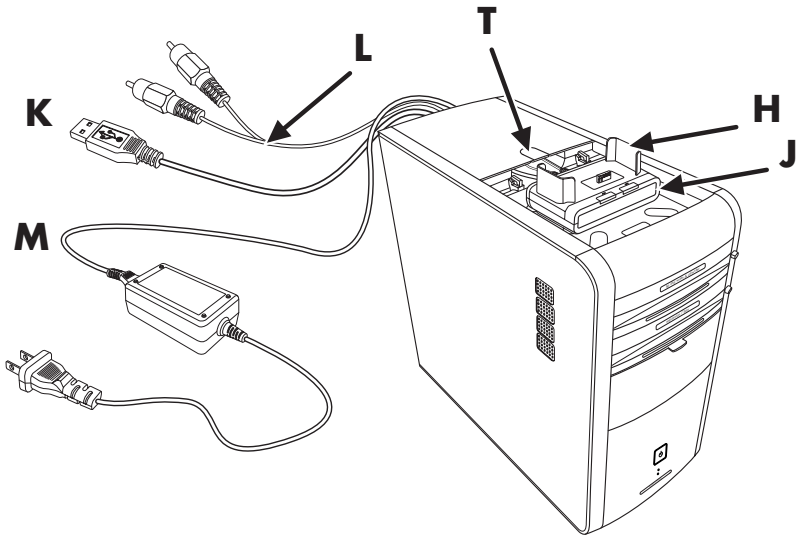
- Install the special bay cover on your PC chassis.
- Assemble the camera cradle (included with the camera) and position it on the DockSpot.
- Place the DockSpot into the chassis bay, and thread the cables.
- Insert the camera.

1 Open the bay cover (**A** on page 70). Hold the cover on each side near the hinges, then lift the cover and slide it toward the back of the chassis (**C** on page 71). Gently lift it off.

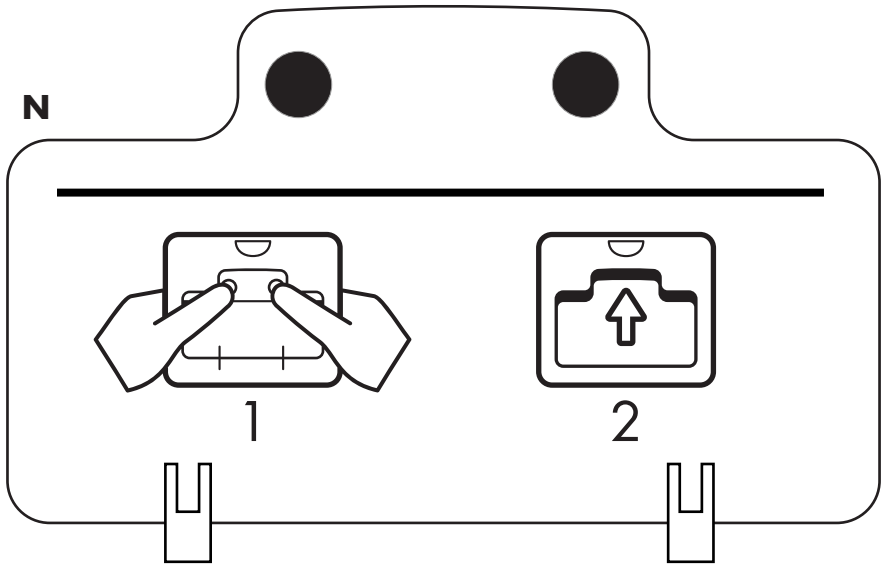
To make it easy to insert the cables during step 3, grasp the tab (**T**) and pull it out toward the front of the chassis (**E** on page 72). Replace the tab when done threading the cables.

2 Place the camera cradle (**H**) (included with the camera) onto the DockSpot (**J**).

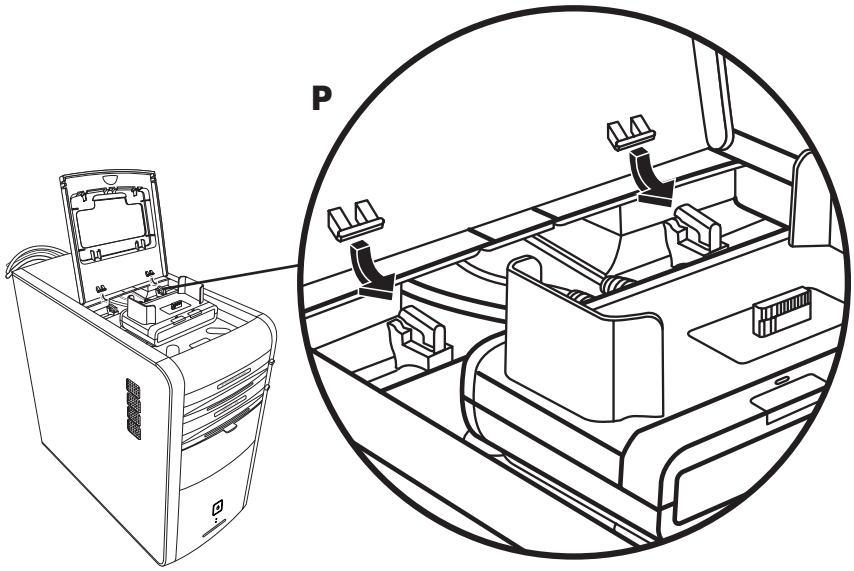
3 Place the DockSpot into the bay. Thread the data cables (**K** and **L**) and power cable (**M**) through the cable tunnel opening at the back of the bay and connect them to the DockSpot.



4 To prepare the new cover, push the two black dots on the inside to free the insert section of the cover, and then move the insert up and out of the cover (**N**).



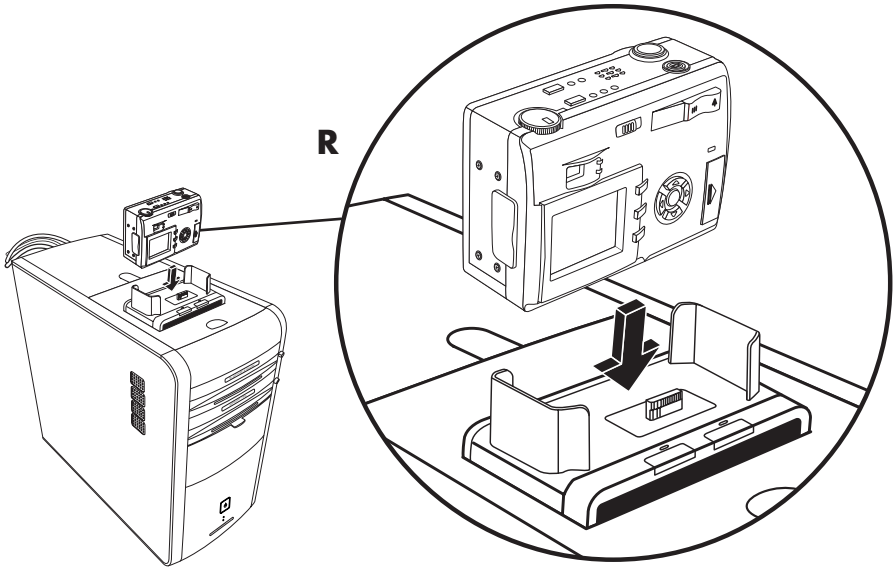
5 Put the new cover on the cover hinges (**P**). Close the cover over the DockSpot.



6 Connect the DockSpot cables:

- Plug the USB cable (**K**) into the back of the PC.
- Plug the red and yellow connectors (**L**) into a TV if you want to view the camera images on a TV.
- Plug the power cord (**M**) into a power outlet.

7 Insert the camera: Hold the camera over the camera cradle (**R**) with the viewer window toward the front of the PC, and lower the camera onto the cradle.



taking care of your pc

protecting your pc from power surges

Power surges, for example voltage spikes, power outages, or brownouts, may cause software problems.

Symptoms of voltage spikes include a flickering video display, unexpected PC startups, and the PC not responding to your commands. A voltage spike can occasionally corrupt or destroy files. Because of this, you should:

- Consistently make backup copies of your data files.

And

- Prevent damage from voltage spikes by installing a PC surge suppressor between the electrical outlet and the PC power cord.

using virus protection programs

HP provides a virus-scanning software program to help protect your PC (select models only).

A PC virus can destroy information on the hard disk drive. You can get a virus from infected files that you open from:

- An e-mail message or attachment.
- A file downloaded from the Internet.
- A diskette (floppy disk).
- A CD or DVD disc.

Some viruses affect your PC immediately, while others may activate only if you open a certain file or do not delete the file before a certain date. New types of viruses are invented all the time.

The virus-scanning software program on your PC has pre-set options that make your PC safe. After you enable the virus-scanning program, it checks your PC files for viruses.

The virus-scanning program manufacturer provides free virus scan updates through your Internet connection for an initial period after your PC purchase. You can purchase a subscription service for updates after the initial free period expires.

You should take the following precautions to protect your PC:

- Do not open unsolicited e-mail from unknown sources.
- Download files only from sources you feel are safe.
- Always scan documents for viruses before opening them.
- Make sure you have the latest version of your virus-scanning software.

If a software program or your operating system becomes damaged, reinstall the software. Refer to "using application recovery and system recovery" on page 91 for details.

increasing available hard disk drive space

Your PC comes with a hard disk drive. Depending on your model, the hard disk drive has from 20 gigabytes (GB) to more than 250 GB of total disk space.

Your PC comes with preloaded software programs and a partition within the hard disk drive that takes up a certain amount of space on the hard disk drive. Refer to "using the recovery tools cd" on page 96 for information on how to make this disk space available.

unavailable hard disk drive space

Preloaded software programs and a partition within the hard disk drive take up a certain amount of space on your hard disk drive.

NOTE: The system recovery image is in a partitioned area of the hard disk drive; this disk space is usually not available for your use.

The partition:

- Houses a backup version of the operating system and the programs included with the PC.
- Takes up about 5 GB of hard disk drive space, reducing the total amount of space available for your use.
- Can be removed using the Recovery Tools CD (see "using the recovery tools cd" on page 96).

Use the following procedures to:

- View the amount of used and free disk space by using the System Tools Disk Management.
- Uninstall unneeded programs.
- Use the Disk Cleanup utility.

viewing the amount of used and free disk space

1. Click **Start** on the taskbar.
2. Click **Control Panel**.
3. Click **Performance and Maintenance**, if it is present.
4. Double-click **Administrative Tools**.
5. Double-click **Computer Management**. The Computer Management window opens.
6. Double-click **Storage**.
7. Double-click **Disk Management (Local)**.

Information displays for each drive on your PC. You may need to scroll the window to the right to see the capacity and free space sizes.

emptying the recycle bin

When you delete a file from the hard disk drive, it goes to the Recycle Bin. You can retrieve files from the Recycle Bin until you empty it. When you empty the Recycle Bin, the files are permanently deleted.

1. Double-click the **Recycle Bin** icon on your Windows desktop.
2. On the File menu, click **Empty the Recycle Bin** to delete all files.
3. Click **Yes** to confirm the deletion.

uninstalling programs

CAUTION: Do not uninstall an unfamiliar program. If you need it, you may not be able to recover it using Application Recovery.

1. Click **Start**.
2. Click **Control Panel**.
3. Double-click **Add or Remove Programs**.
4. Click the **Change or Remove Programs** icon on the left of the screen, if it is not already selected.
5. Select the program to uninstall.
6. Click the **Change/Remove** button, and then follow the onscreen instructions.

removing desktop icons

You can remove most desktop icons by either deleting them or moving them to an unused icons folder.

CAUTION: Do not delete unfamiliar desktop icons. Instead, follow the steps to move unfamiliar desktop icons to the Unused Desktop Shortcuts folder.

Delete a desktop icon by right-clicking the icon and then selecting **Delete**.

To move a desktop icon to the Unused Desktop Shortcuts folder:

1. Click **Start**.
2. Click **Control Panel**.
3. Click **Appearance and Themes**, if it is present.
4. Double-click **Display**.
5. On the Desktop tab, click **Customize Desktop**.
6. Under Desktop cleanup, click **Clean Desktop Now**.
7. Follow the onscreen instructions.

Retrieve a desktop icon by opening the Unused Desktop Shortcuts folder on your desktop and dragging the icon onto the desktop.

cleaning up your hard disk drive

As you use your PC and store files, the hard disk drive fills up and becomes cluttered, affecting performance. To manage this, delete files you are not using.

1. Close all open programs.
2. Click **Start** on the taskbar.
3. Click **My Computer**.
4. Right-click the hard disk drive you want to clean, and click **Properties**.
5. On the General tab, click **Disk Cleanup**.
6. Wait for the calculations to complete.

CAUTION: Do not delete unfamiliar files. If in doubt, do not delete.

7. Select the types of files you want to delete, click **OK**, and then click **Yes**.
8. Click **OK** to close the window.

troubleshooting

Symptom describes the sign or warning message for the type of problem.

Problem identifies one or more reasons why the symptom may have occurred.

Solution describes what you should do to try to solve the problem.

For help on general and miscellaneous problems you may be experiencing with your PC, refer to the following pages for possible solutions. For more detailed information, press the Help button on your keyboard, or click **Start** on the taskbar and select **Help and Support**.

To find help for problems with your PC, see the table in this section that describes the symptom, problem, and solution for your situation. Look up the description of the symptom or problem, and try the solution listed. The tables appear in this order:

- Audio
- CD-ROM, CD-RW, DVD-ROM, or DVD Writer Drive
- Diskette (Floppy) Drive
- Display (Monitor)
- Hard Disk Drive
- Hardware Installation
- Internet Access
- Keyboard and Mouse
- Memory
- Power
- Miscellaneous

Some of the symptoms listed may not apply to your PC. For problems relating specifically to the monitor or printer, refer to the equipment documentation.

audio

Symptom	Problem	Solution
No sound is produced.	Volume is muted.	Press the Mute button on the keyboard to see if the mute feature is turned on. *Or* **1** Click **Start**, and then click **Control Panel**. **2** Click **Sounds, Speech, and Audio Devices**, if it is present, and then double-click **Sounds and Audio Devices**. **3** Click the **Mute** check box to remove the check mark from the box.
	Volume is turned down.	Use the keyboard controls to increase the volume.
	Speakers are turned off.	Check whether speakers are turned on.
	Speaker cables are not properly connected.	Turn off your PC, and reconnect the speakers.
	PC is in standby mode.	Press the Standby button (select models only) or press the Esc key on the keyboard to resume from standby mode.
	A passive speaker system is being used.	Replace the speaker system with an active speaker system. Active speakers have a power cord and On button, and connect to the Audio Out (green) connector on the PC.
	Headphones are plugged in.	Unplug the headphones.

cd-rom, cd-rw, dvd-rom, or dvd writer drive

Symptom	Problem	Solution
CD-ROM, CD-RW, DVD-ROM, or DVD+RW/+R drive cannot read a disc or takes too long to start.	Disc is upside down in the drive tray.	Reinsert the disc with the label facing up.
	DVD drive takes longer to start because it has to determine media type being played.	Wait at least 30 seconds to let the DVD drive determine the type of media. If it still does not start, read the other solutions listed in this topic.
	Disc is dirty.	Clean the disc with a CD cleaning kit, available from most PC stores.
	Windows does not detect CD-ROM or DVD-ROM driver.	Driver program may be corrupted. Force the software to reinstall it by doing the following: **1** Click **Start**, and then click **Control Panel**. **2** Click **Performance and Maintenance**, if it is present, and then double-click **System**. **3** Click the **Hardware** tab, and then click the **Device Manager** button. **4** Click the plus sign (**+**) next to the DVD/CD-ROM drives, and select the problem drive. **5** Click the **Action** menu item, and select **Uninstall**. **6** Restart your PC: Click **Start**, click **Turn Off Computer**, and then click **Restart**.
Recording audio CDs is difficult or impossible.	Wrong disc type or poor quality disc is being used.	Verify that you are using the correct disc type (media) for the drive. Try a different brand of disc.
Cannot remove a CD or DVD disc.	The PC is turned off.	Turn on your PC and press the Eject button to extend the tray.

cd-rom, cd-rw, dvd-rom, or dvd writer drive (*continued*)

Symptom	Problem	Solution
Cannot create (burn) a CD.	Problem with disc.	• Make sure the disc is clean and undamaged. If recording stopped during a recording session, the disc may be damaged; use a different disc. • Use the correct type of disc for the type of files you are recording. When using a CD-R disc, make sure it is blank when recording music, and is blank or appendable (disc with space to add more data files) when recording data. • Make sure the label is face up and centered in the tray.
	Problem with drive.	• Make sure the disc is in the correct drive. • Make sure the recording disc tray is clean and undamaged. • Select a slower write speed for the recording drive. Refer to the Help menu in the RecordNow! recording program to choose the speed.
	Problem with PC operation.	• Close all software programs and windows before recording. • If you are on a network, copy the files from a network drive to your hard disk drive first, and then record them to disc. • Restart the PC and try again.

diskette (floppy) drive (select models only)

Symptom	Problem	Solution
PC is unable to read the diskette (floppy disk).	A non-formatted diskette has been inserted.	To format the diskette: **1** Click **Start**, and then click **My Computer**. **2** Right-click the **3½ Floppy (A:)** icon. **3** Select **Format**. **4** Select the desired options, and click **Start** to begin formatting the diskette.
	Diskette is damaged.	Use a new diskette.
	Diskette drive has failed.	Press the Help **?** button on the keyboard to open the Help & Support Center, or refer to the *Warranty & Support Guide* to contact Support for replacement details.
Invalid system disk message displays.	A diskette has been left in the drive during startup.	When drive activity stops, remove the diskette and press the spacebar. The PC should start up.
Diskette drive activity light stays on.	Diskette is improperly inserted.	Remove the diskette, and reinsert it: Insert the diskette with the round metal disk facing-down and the arrow on the top pointing into the drive, and then push the diskette in until it stops.
	Diskette drive is damaged.	Press the Help **?** button on the keyboard to open the Help & Support Center, or refer to the *Warranty & Support Guide* to contact Support for replacement details.

diskette (floppy) drive (select models only) (*continued*)

Symptom	Problem	Solution
Diskette drive cannot save (write) information to the diskette.	Diskette is full or the file is too big.	Use another diskette or compress the file to reduce its size.
	Diskette is write-protected.	Slide the write-protection tab to the unlocked position on the diskette.
	File Save command was not properly executed.	When saving information to the diskette drive, verify that you are using the correct drive letter.
	Diskette is damaged.	Replace the diskette.
	Diskette is not formatted.	To format the diskette: **1** Click **Start**, and then click **My Computer**. **2** Right-click the **3½ Floppy (A:)** icon. **3** Select **Format**. **4** Select the desired options, and click **Start** to begin formatting the diskette.

NOTE: If you encounter display (monitor) problems, refer to the documentation that came with your monitor and to the common causes and solutions listed in this table.

display (monitor)

Symptom	Problem	Solution
Screen is blank, and monitor power light is not lit.	Monitor power cable is not connected to the monitor or to the wall outlet.	Reconnect the power plug on the back of the monitor and on the wall outlet.
	Monitor is off (not turned on).	Press the On button on the front of the monitor.
Screen is blank.	Screen saver is enabled.	Press any key or move the mouse to make the screen display visible again.
	PC is in standby mode.	Press the Standby button (select models only) or press the Esc key on the keyboard to resume from standby mode.
	PC is in hibernation mode or is off.	Press the On button to turn on the PC.
	Monitor connector cable is not properly connected to the back of the PC.	Inspect the monitor video connector for bent pins. If no pins are bent, reconnect the monitor connector cable on the back of the PC.
Images on the screen are too large or too small, or the images are fuzzy.	The screen resolution setting may not be set to your liking or may not be the best for your monitor.	Adjust the monitor resolution setting in Windows. See "adjusting the monitor" on page 29 for instructions. See your monitor documentation for the best resolution for your monitor.

hard disk drive

Symptom	Problem	Solution
PC seems to be locked up and not responding.	Program in use has stopped responding to commands.	Use the Windows Task Manager to close any programs not responding or to Restart the PC: **1** Press the **Ctrl**, **Alt**, and **Del** keys on the keyboard at the same time. **2** Select the program that is not responding, and click **End Task**. *Or* Click **Shut Down**, and then click **Restart**. If this does not work, press the On button for 4 or more seconds to turn off the PC. Then, press the On button.
Hard disk drive error message displays.	Part of hard disk drive has failed or is about to fail.	Press the Help **?** button on the keyboard to open the Help & Support Center, or refer to the *Warranty & Support Guide* to contact Support for replacement details.

hardware installation

Symptom	Problem	Solution
A new device is not recognized as part of the system.	Device driver is not installed.	Install the device driver from the CD or diskette provided with the device, or download and install the driver from the device manufacturer's Web site. You may need an updated driver for Windows XP. Contact the device vendor directly for an update. For HP peripherals, visit the HP Web site. Refer to the *Warranty & Support Guide* for details.
	Device connector is not seated or connected properly.	Ensure that the device is properly and securely connected and that the pins in the connector are not bent down.
	Cable(s) of new external device are loose, or power cables are unplugged.	Ensure that all cables are properly and securely connected and that the pins in the cable or connector are not bent.
	Power switch of new device is not turned on.	Turn off the PC, turn on the external device, and then turn on the PC to integrate the device with the PC system.
	When the system advised you of changes to the configuration, you did not accept them.	Restart the PC, and follow the instructions for accepting the changes.
	A Plug and Play card may not automatically configure when added, if the default configuration conflicts with other devices.	Deselect the automatic settings in the operating system for the card, and choose a basic configuration that doesn't cause a resource conflict. You can also reconfigure or disable devices to resolve the resource conflict.

hardware installation (*continued*)

Symptom	Problem	Solution
New device does not work.	Cannot install new device driver.	You must be logged in as the computer administrator to install or uninstall a device driver. To switch users, click **Start**, click **Log Off**, and then click **Switch User**; choose the computer administrator user. (The computer administrator is usually the user *Owner*.)
New or existing device does not work after installing a new device.	A hardware device conflict exists.	To resolve a device conflict, you may need to disable one of the devices or uninstall an old device driver: **1** Click **Start** and choose **Control Panel**. **2** Click **Performance and Maintenance**, if it is present. **3** Double-click the **System** icon and select the **Hardware** tab. **4** Click the **Device Manager** button. **5** Click the **+** (**plus**) symbol next to the problem device and check for exclamation points in a yellow circle near the device icon. The exclamation point means there is a device conflict or problem with the device. Exclamation points do not always appear when a device is not working properly. **6** If there is an old or unnecessary device driver listed in the Device Manager, this may be causing the device conflict. To uninstall the old driver for the new device driver to work properly, do the following: right-click the device, click **Uninstall**, and then click **OK**. **7** Right-click the device and select **Properties**. **8** If available, click the **Resources** tab to verify that there is a device conflict. **9** Click the **General** tab to see if your device is enabled and working properly. If it is available, click the **Troubleshoot** button and follow the onscreen instructions in the device troubleshooter wizard. **10** Restart the PC. Click **Start**, click **Turn Off Computer**, and then click **Restart**.

internet access

Symptom	Problem	Solution
Cannot connect to the Internet.	Internet Service Provider (ISP) account is not set up properly.	Verify Internet settings, or contact your ISP for assistance.
	Modem is not set up properly.	Reconnect the modem, verifying connections; see page 8. Note that your PC may also have an Ethernet network interface (also called a network interface card, or NIC) that connects to a LAN (Local Area Network). Although it looks similar to the modem connector, the RJ-45 Ethernet network connector is not the same. Verify that you are using the modem connector. Do not connect a telephone cable to the NIC. Do not plug a network cable into a telephone service line; doing so may damage the NIC.
	Web browser is not set up properly.	Verify that the Web browser is installed and set up to work with your ISP.
Cannot automatically start Internet programs.	You must log in to your ISP before some programs will start.	Log in to your ISP, and start the desired program.
Internet takes too long to download Web sites.	Modem is not set up properly.	Verify that the correct modem speed and COM port are selected: **1** Click **Start**, and then click **Control Panel**. **2** Click **Printers and Other Hardware**, if it is present. **3** Double-click **Phone and Modem Options**. **4** Select the **Modems** tab, and then click the **Properties** button. **5** In the *Device status* area, verify the modem is working properly. **6** In the *Device usage* area, verify the modem is enabled. **7** If there are further problems, click the **Troubleshoot** button and follow the onscreen instructions.
The AOL program comes up even it is not being used.	The PC is still trying to use AOL for Internet access.	You may want to remove the AOL program. To uninstall AOL: **1** Click **Start** on the taskbar. **2** Click **Control Panel**. **3** Double-click **Add or Remove Programs**. **4** Select **America Online**, click **Change/Remove**, and then click **Yes** when the confirmation window opens. **NOTE:** Removing the AOL program will not cancel your account with AOL.

keyboard and mouse

Symptom	Problem	Solution
Keyboard commands and typing are not recognized by the PC.	Keyboard connector is not properly connected.	Turn off the PC by using the mouse, reconnect the keyboard to the back of your PC, and turn on your PC.
	Program in use has stopped responding to commands.	Restart or turn off your PC using the mouse.
	Keyboard is damaged.	Press the Help **?** button on the keyboard to open the Help & Support Center, or refer to the *Warranty & Support Guide* to contact Support for replacement details.
Cursor will not move using the arrow keys on the keypad.	The Num Lock key may be on.	Press the Num Lock key. The Num Lock light should not be on if you want to use the arrow keys in the number keys group.
The keyboard Print button does not work.	Some programs do not recognize the Print button.	Use the Print menu item in the program.
Wireless keyboard does not work after installation or is not detected.	Keyboard batteries are low or empty.	Replace the two AA alkaline batteries in the wireless keyboard; then set the ID channel by pressing the Connect button on the wireless receiver and then on the keyboard. Refer to the documentation that came with your wireless set.
Mouse does not respond to movement or is too slow.	Mouse connector is not properly plugged into the back of the PC.	Turn off your PC using the keyboard: **1** Press the Ctrl and Esc keys on the keyboard at the same time to display the Start menu. **2** Use the up or down arrow key to select **Turn Off Computer**, and then press the Enter key on the keyboard. **3** Use the up or down arrow key to select **Turn Off**, and then press the Enter key. After the shutdown is complete, plug the mouse connector into the back of your PC and turn on your PC.
	Program in use has stopped responding to commands.	Restart your PC by using the keyboard. If possible, save any open files and close open applications before restarting.
Mouse moves only vertically or horizontally.	Mouse roller ball is dirty.	Remove roller ball cover from bottom of mouse and clean the ball with a damp, lint-free cloth (not paper).
	Mouse is damaged.	Press the Help **?** button on the keyboard to open the Help & Support Center, or refer to the *Warranty & Support Guide* to contact Support for replacement details.
Mouse does not work after installation or is not detected.	Mouse is not connected properly.	Try unplugging and then reconnecting the mouse cable to your PC.
	Wireless mouse batteries are low or empty.	Replace the two AA alkaline batteries in the mouse; then set the ID channel by pressing the Connect button on the wireless receiver and then on the mouse. Refer to the documentation that came with your wireless set.

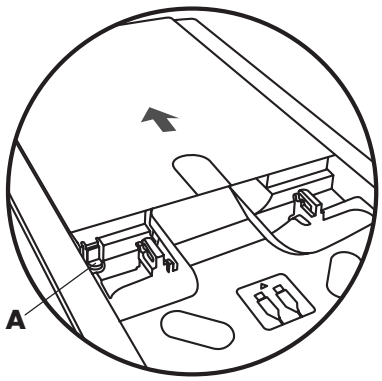
keyboard and mouse (*continued*)

Symptom	Problem	Solution
Optical mouse does not track cursor well.	The optical sensor uses the pattern of the surface to track the position of the cursor. Reflective surfaces, grooved surfaces, glass, or other see-through surfaces inhibit the ability of the sensor to track the cursor.	Place the mouse on a mousepad or white sheet of paper.
	Mouse sensor is dirty.	Wipe the light sensor lens on the bottom of the mouse with a lint-free cloth (not paper).
Mouse cursor moves too fast.	The wireless mouse moves the cursor more quickly than a standard mouse.	Adjust the mouse speed. See page 20.

memory

Symptom	Problem	Solution
Insufficient memory message is displayed.	All memory in the PC is being used by open programs, and memory is needed for a desired task.	Close all open programs, and then try desired task again. *Or* Restart your PC: **1** Click the **Start** button. **2** Click **Turn Off Computer**. **3** Select **Restart**.

multi-storage bay

Symptom	Problem	Solution
Cannot remove the cables for an external device from the multi-storage bay cable tunnel (select models only).	Cables are caught in the cable tunnel.	Remove the rear top cover: **1** Open the bay cover. Hold the cover on each side near the hinges, and then lift the cover and slide it toward the back of the chassis. Gently lift it off. **2** Press tab (**A**) inside the bay and slide the top rear cover toward the back of the chassis; then lift off the cover. 

power

Symptom	Problem	Solution
PC will not turn on and/or start.	PC is not securely connected to an external power source.	Ensure that cables connecting the PC to the external power source are plugged in properly.
	Monitor is not connected or is not on.	Connect the monitor to the PC, plug it in, and turn it on.
	Line voltage selection switch is not in the proper position for your country/region (115V/230V).	Set the line voltage selection switch to the correct setting for your country/region, or refer to the *Warranty & Support Guide* to contact Support.
	Wall outlet is defective.	Test the outlet by connecting a different electrical device to the outlet.
	Wrong memory modules were used in an upgrade, or memory modules were installed in the wrong location.	Reinstall the old memory to return your PC to its original state. Refer to "upgrading and servicing the pc" for instructions.
	Hard disk drive is damaged.	Press the Help **?** button on the keyboard to open the Help & Support Center, or refer to the *Warranty & Support Guide* to contact Support for replacement details.
	After an upgrade or repair, the drive power, data, or power supply cables may not be properly connected.	Reseat drive power, data, and power supply cables. See the "upgrading and servicing the pc" for instructions.
PC appears locked up and won't turn off when the On button is pressed.	PC is not working.	Press and hold the On button until the PC turns off.
PC powered off automatically.	The unit temperature was exceeded.	Unit is in an exceedingly hot environment. Let it cool down. Ensure PC air vents are not blocked and internal fan is running. Note that your PC may not have an internal fan.
	The unit temperature was exceeded because the PC was functioning with the cover or access panel removed.	Replace cover or access panel, and let the PC cool down before attempting to turn on power to the PC.
	Processor or system fan has failed.	Refer to the *Warranty & Support Guide* to contact Support for replacement details. Note that your PC may not have an internal fan.

miscellaneous

Symptom	Problem	Solution
PC date and time display is incorrect.	RTC (real-time clock) battery may need to be replaced. Battery life is approximately 3–5 years.	First, reset the date and time in your operating system by using the Control Panel. If the problem persists, replace the battery. See the "upgrading and servicing the pc" for instructions, or refer to the *Warranty & Support Guide* to contact Support for replacement details.
Printer has problems.	Printer will not print correctly or at all.	If you encounter printer problems, refer to the documentation that came with your printer.

using application recovery and system recovery

The PC uses the operating system and installed software programs during normal operation. If your PC works improperly or stops because of the software, you may be able to repair it.

You need recovery discs (CDs or DVDs) for some repairs that use the HP Application Recovery program or the HP PC System Recovery program. The PC does not include recovery discs in the accessory box, but you can make your own recovery CDs or DVDs; see "creating recovery cds/dvds" on page 94.

CAUTION: It is strongly recommended you create your recovery discs before you need them.

You should also make the HP PC Recovery Tools CD. This CD contains utilities that allow you to make changes to your hard disk drive, including removing the recovery partition. See "using the recovery tools cd" on page 96.

There are several methods to fix your PC, including using the System Recovery program. Try these methods in the order listed here, or refer to the table that follows the list.

- **Restart** When you restart the computer, the PC *starts over* using the operating system and software in its memory. This is the simplest repair for your PC; just click **Start**, choose **Turn Off Computer**, and then click **Restart**.
- **Turn Off Computer** When you turn off the computer and then turn it on again, you force the PC to copy the operating system into its memory and to clear some tracking information. This may eliminate some problems that can remain after performing a Restart. Refer to "turning off the pc" on page 11.
- **Driver Rollback** This Microsoft Windows XP feature is part of the Windows Installer program used with the *Add or Remove Programs* utility in the Control Panel. It can revert to the previous version of a driver program if an installation fails when you are installing a new version of the driver program. For more information, type *Rollback* into the Search box in Help and Support.

- **System Restore** This Microsoft Windows XP feature creates a restore point where it records the PC settings at that time and date. You can later return the PC to the settings recorded at the restore point. You can create a specific restore point, or have the operating system create a restore point. For example, when you use *Add Programs* to add a software program, the operating system automatically creates a restore point before it adds the software. Use System Restore to return the PC to the settings the PC had before you installed the program. For more information, type *System Restore* into the Search box in Help and Support.
- **Application and Driver Recovery** If the problem with the PC seems to be with only one program or one driver, it may be that the application program or the driver program is damaged. You can reinstall individual factory-installed application programs and driver programs by using the HP Application Recovery program (select models only); see "application recovery" on page 97.
- **System Recovery** Use the HP PC System Recovery program as a last resort to reinstall the software. Perform System Recovery using the hard disk drive partition first; see "system recovery" on page 98. If necessary, next perform System Recovery using the recovery discs and choose Standard Recovery; see "starting system recovery using recovery discs" on page 99. Finally, if necessary, perform System Recovery using the recovery discs and choose full System Recovery.

Before using the HP PC System Recovery program or the HP Application Recovery program, use System Restore.

NOTE: Your PC hard disk drive contains the System Recovery image in a partition area of the disk drive. The PC does not include recovery discs in the accessory box, but you can make your own recovery CDs or DVD; see "creating recovery cds/dvds" on page 94.

When your PC stops working correctly, the Restart, Turn Off Computer, and Driver Rollback methods (described above) may resolve the problem. After you have tried these three methods, if needed, try the remaining actions, using the table that follows as a quick reference.

For the specific PC problem, try the method listed as #1, then #2, and then #3.

Problem/Status	Microsoft System Restore	Application Recovery program	System Recovery from the hard disk partition	System Recovery from the recovery CDs/DVDs
You installed a new application or device driver	1			
An application does not work	1	2	3	
A device driver does not work		1	2	
PC stops responding or does not work	1		2	3
You replaced the hard disk drive or removed the partition				1

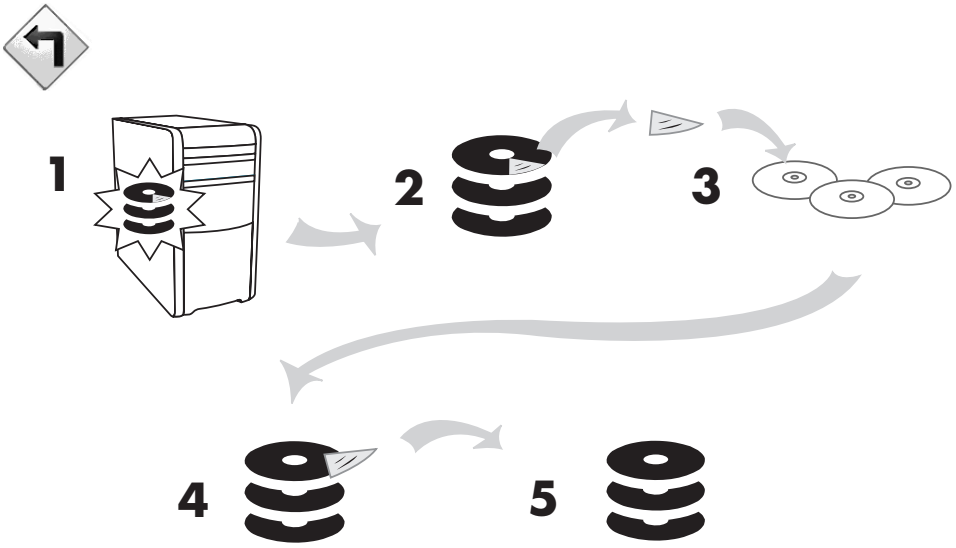
creating recovery cds/dvds

A **hard drive** is a disk inside the computer that stores the operating system, programs, and data.

1. You can **recover (bring back)** the operating system and programs that were included on your hard drive just as they were when you bought the computer.
2. You recover the operating system and programs directly from your hard drive, where a copy was placed for your convenience.

   We call this part of your hard drive the "**recovery partition**."

   The recovery partition takes up some space on your hard drive.
3. You can copy the information of this recovery partition onto CDs or DVDs.
4. Then, if you would like to make extra space available on your hard drive, you can delete the recovery partition using a special software tool.
5. **Do not delete** your hard drive partition unless you have made recovery CDs or DVDs.



The recovery discs can be used only with the specified PC model. The discs are licensed for use only with your PC. The recovery CDs/DVD can install the operating system and software on your PC hard disk drive if the software becomes corrupted or is accidentally erased.

using recovery cd-dvd creator

Make recovery CDs or DVDs for your PC by using the HP PC Recovery CD-DVD Creator program before you experience any problem.

The recovery discs set is a complete image of the original PC hard disk drive contents and is matched to your PC model number. The discs set contains the operating system, drivers, and application software that were originally installed on the PC at the factory.

You can use this program to make only one set of recovery CDs or DVDs for your PC. The recovery discs you create can be used only on your PC.

There are several advantages in using DVDs instead of CDs when creating your recovery discs set:

- With a faster data transfer rate, a set of DVD recovery discs will have your PC running much sooner than a CD set will.
- A set of DVDs will probably take you less time to create than a set of CDs.
- A DVD has more capacity than a CD, so there are fewer discs to record and store.

To use this program, your PC must have a CD-RW drive, DVD Writer drive, or other drive that can write to the CDs or DVDs. If necessary, purchase a Windows XP-compatible drive from your local PC or electronics store.

The number of CDs/DVDs in the recovery set depends on your PC model. The program tells you the number of blank discs needed to make the set. The process takes some time, including up to 15 minutes per disc to verify that the information written on the disc is correct.

You can quit the process at any time. The next time you run the program, it begins where you left off.

to run the recovery cd-dvd creator program:

1. Close any open programs. To close programs, click **X** in the upper-right corner of each window.
2. Click **Start** on the taskbar.
3. Choose **All Programs**.
4. Choose **PC Help & Tools**.
5. Click **HP PC Recovery CD-DVD Creator**. The creator window appears.
6. Follow the onscreen instructions. Label each disc as you make it.

Store the System Recovery discs in a safe place.

using the recovery tools cd

Your PC allows you to create (burn) a Recovery Tools CD. After you make the HP PC Recovery Tools CD, you can use it to:

- Read instructions to use each utility on the Recovery Tools CD.
- Start the System Recovery program from the recovery partition.
- Remove the System Recovery partition from your PC hard disk drive to increase space for data.
- Create a new data partition on your PC hard disk drive.
- Start the Microsoft Recovery Console (a utility from Microsoft that can perform operating system diagnostics and repairs).

WARNING: Before using the HP PC Recovery Tools CD to change your hard disk drive, make System Recovery CDs for your PC by using the HP PC Recovery CD-DVD Creator program. You cannot make System Recovery CDs after you remove the system recovery partition.

You must create (burn) the Recovery Tools CD before you can use it.

to create or to start the recovery tools cd:

1. Click **Start** on the taskbar.
2. Choose **All Programs**.
3. Choose **PC Help & Tools**.
4. Click **HP PC Recovery Tools CD**. The tools window appears.
5. Follow the onscreen instructions.

Store the Recovery Tools CD in a safe place.

system restore

WARNING: Try System Restore before using the HP PC System Recovery program.

If software on your hard drive accidentally gets erased or damaged, first use the Microsoft *System Restore* feature in Windows XP to restore the PC system and program settings.

System Restore returns the PC settings to a selected restore point without affecting user programs or document files. For more information, type *System Restore* into the Search box in Help and Support.

to start system restore:

1. Close all open programs.
2. Click the **Start** button.
3. Choose **All Programs**.
4. Choose **Accessories**.
5. Choose **System Tools**.
6. Click **System Restore**.

Follow the onscreen instructions.

application recovery

NOTE: Not all models include the Application Recovery program. Perform steps 3 through 5 of the following procedure. If *HP Application Recovery* appears in the folder, your PC includes the program.

If an individual factory-installed application or driver accidentally gets erased or damaged, you can reinstall the software using the HP Application Recovery program (select models).

NOTE: Do not use the Application Recovery program to reinstall software programs that came on CDs or DVDs included in the PC box. Reinstall these programs directly from the CDs or DVDs.

to start application recovery:

1. Close all applications and folders.
2. Uninstall the existing (damaged) application; see "uninstalling programs" on page 77.
3. Click **Start** on the taskbar.
4. Choose **All Programs**.
5. Choose **PC Help & Tools**.
6. Click **HP Application Recovery**, and then click **Yes**.
7. Click **Application Installation** or **Driver Installation**, and then click **Next**.
8. Select the driver or application program to install, and then click **Install**.
9. Follow the onscreen instructions.
10. Repeat steps 7 through 9 to install other drivers or applications.
11. When you have finished recovering applications or drivers, close the Application Recovery program. Then click **Start**, click **Turn Off Computer**, and click **Restart** to restart the PC.

WARNING: Do not skip this last step! You must restart the PC when you are finished recovering applications or drivers.

system recovery

When other methods of repairing your system software (like System Restore or Application Recovery) fail, you may want to use the HP PC System Recovery program as a last resort to reinstall the software.

When necessary, you can reinstall the operating system and the application software that was originally installed on the PC at the factory by using the System Recovery program.

WARNING: The HP PC System Recovery program will delete any data or programs that you installed after purchase. Be sure to back up any data that you want to keep onto a removable disc.

The System Recovery program uses a special *recovery partition* on the hard disk that stores an image of the original software.

NOTE: The System Recovery image is in a partition area of the hard disk drive and takes up part of the total drive space. This disk space is not usually available for your use.

In the unlikely event that you replace the hard disk drive, or somehow damage the data in the special recovery partition on the hard disk drive, use recovery discs to reinstall the operating system and software on the hard disk drive. See "system recovery using recovery discs" on page 99.

Make your own recovery discs (CDs or DVD) before you need them; see "creating recovery cds/dvds" on page 94. You can also make the Recovery Tools CD. This CD contains utilities that allow you to make changes to your hard disk drive; see "using the recovery tools cd" on page 96.

starting system recovery if the pc is responding

1. Turn off the PC. Disconnect all peripheral devices from the PC except the monitor, the keyboard, and the mouse. Turn on the PC.
2. Click **Start** on the taskbar, choose **All Programs**, choose **PC Help & Tools**, and then click **HP PC System Recovery**.
3. Wait until the System Recovery window appears asking *Do you really want to start System Recovery?*
4. Click **Yes** to continue with the recovery process. If you created recovery discs, you may be directed to insert recovery disc #1.
5. The PC starts the recovery; wait for the onscreen instructions to display, and then follow those instructions.
6. Complete the PC startup, and finish the registration process; then reconnect all peripheral devices.

starting system recovery if the pc is not responding

1. Turn off the PC. If necessary, press and hold the On button until the PC turns off.
2. Disconnect all peripheral devices from the PC except the monitor, the keyboard, and the mouse.
3. Press the On button to turn the PC on.
4. During the startup, do the following to enter the System Recovery program:

   When the blue screen with the HP Invent logo appears, press the F10 key on the keyboard. (You have only a few seconds to press the F10 key before the normal startup process continues.)
5. The PC starts the recovery; wait for the onscreen instructions to display, and then follow those instructions.
6. Complete the PC startup, and finish the registration process. Then reconnect all peripheral devices.

system recovery using recovery discs

Make your own recovery CDs/DVDs before you need them; recovery discs are not included with your PC. See “creating recovery cds/dvds” on page 94.

starting system recovery using recovery discs

The recovery discs provide two recovery options:

- **Standard Recovery**: This option recovers factory-shipped programs, drivers, and the operating system without affecting any data files that you may have created since purchasing this PC. Some data files may be difficult to find after the System Recovery, so it is best to back up all hard disk drive files before performing a System Recovery.
- **Full System Recovery**: This recovery function completely erases and reformats the hard disk drive. The program performs a full System Recovery to reinstall the operating system, programs, and drivers from the recovery discs. However, you must reinstall any software that was not installed on the PC at the factory. This includes software that came on CDs included in the PC accessory box, and software programs you installed since your purchase.

NOTE: If your PC has a blank or corrupted hard disk drive, you will see only the full System Recovery option.

---

to run system recovery program using recovery discs:

1. If the PC works, back up all data files that you want to save onto removable media, such as CD-RW or diskette. Remove the backup CD or diskette you've made.
2. Press the Eject button on the top disc drive, and wait for the tray to open. Insert Recovery disc #1 and close the tray.
3. Turn off the PC:
   - If the PC works: Click **Start** on the taskbar, click **Turn Off Computer**, and then click **Turn Off**.

   Or

   - Press and hold the On button approximately 5 seconds until the PC turns off.
4. Disconnect all peripheral devices from the PC except the monitor, the keyboard, and the mouse.
5. Press the On button to turn on the PC.
6. The PC starts the recovery; wait for the onscreen instructions to display, and then follow those instructions:
   - For standard recovery, press R. Click **Next** to proceed with the System Recovery. Click **Yes** to start the recovery. Insert the remaining recovery discs when directed.

   Or

   - For full System Recovery, press F. Click **Yes** to perform a full System Recovery. Confirm that you want to create a recovery partition. Insert the remaining discs when directed.

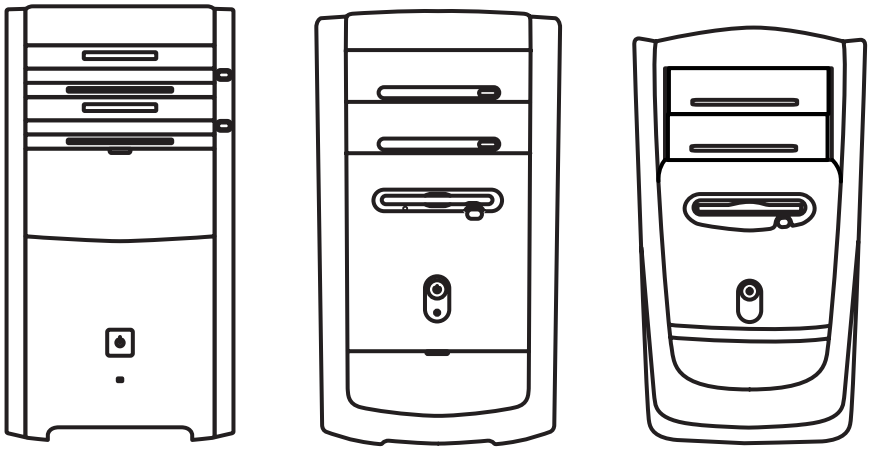
   Or

   - If your PC hard disk drive is blank or corrupted, press R to perform a full System Recovery. Insert the remaining recovery discs when directed.
7. When the recovery program finishes, click **Restart** to restart the PC.
8. Before the PC restarts, the drive tray ejects. Remove the disc.
9. After the PC restarts, a series of startup screens appears. To proceed with the initial Microsoft Windows setup, you must answer a few questions.
10. Complete the registration process, and then reconnect all peripheral devices.
11. Reinstall software not originally installed on the PC by the factory.
12. Copy data files that you saved on the backup CD or diskette you made to your hard disk drive.

upgrading and servicing the pc

This chapter provides instructions on how to remove and replace the hardware components of your PC.

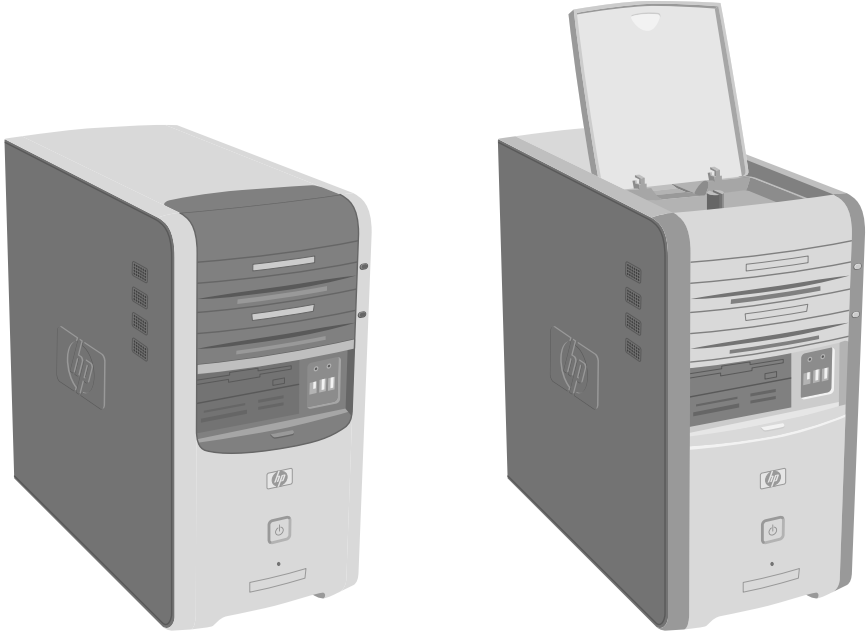
- Use "upgrading and servicing the pc (1)" on page 103 if your PC looks like **A**.
- Use "upgrading and servicing the pc (2)" on page 129 if your PC looks like **B**.
- If your PC does not resemble any of these pictures, then your PC may have a separate printed guide.



A **B** **B**

upgrading and servicing the pc (1)

The “upgrading and servicing the pc (1)” chapter provides instructions on how to remove and replace hardware components of your PC.



opening and closing the pc

preparing the pc

Read the following items before attempting to upgrade or service the PC:

- These procedures assume familiarity with the general terminology associated with personal computers and with the safety practices and regulatory compliance required for using and modifying electronic equipment.
- Write down and save the system model and serial numbers, all installed options, and other information about the system. It will be easier to consult this information than to open up and examine the PC.
- HP recommends that you use an antistatic wrist strap and a conductive foam pad when working on the system.

WARNING: Always disconnect the modem cord from the telephone system, and then disconnect the PC from the power source before removing the front and side panels of the PC. Failure to do so before you open the PC or do any procedures can result in personal injury or equipment damage.

before opening the pc

To avoid injury and equipment damage, always follow this procedure in this order before opening the PC:

1. Remove any media from the drives.
2. Turn off the PC and all peripherals.
3. Disconnect the modem/telephone cable.
4. Disconnect the power cord and all other attached cables (such as the keyboard, mouse, and monitor).

WARNING: Please read "Safety Information" in the beginning of this document before installing and connecting your system to the electrical power system.

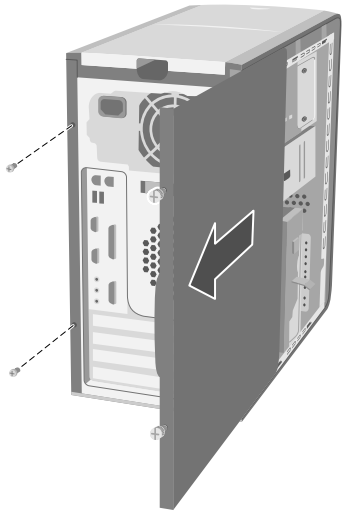
after closing the pc

To avoid injury and equipment damage, always follow this procedure in this order after closing the PC:

1. Reconnect the power cord and all other attached cables (such as the keyboard, mouse, and monitor).
2. Reconnect the modem/telephone cable.
3. Turn on the PC and all peripherals.
4. If you installed an add-in card, install any software drivers supplied by the card manufacturer.

removing the side panel

1. See "before opening the pc" on page 104.
2. Loosen the two thumbscrews on the right side of the back panel. The first time you loosen these screws, you may need to use a Phillips screwdriver. These screws do not detach; they stay on the side panel loosely until you tighten them again.



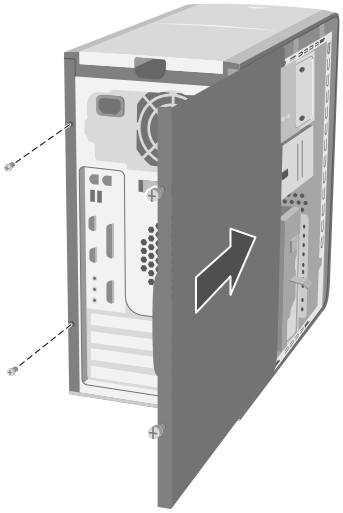
3. Pull the panel back toward you until it stops. Lift the panel off the chassis and set it aside.

NOTE: You do not need to remove the other side panel to replace the hardware listed in this guide.

---

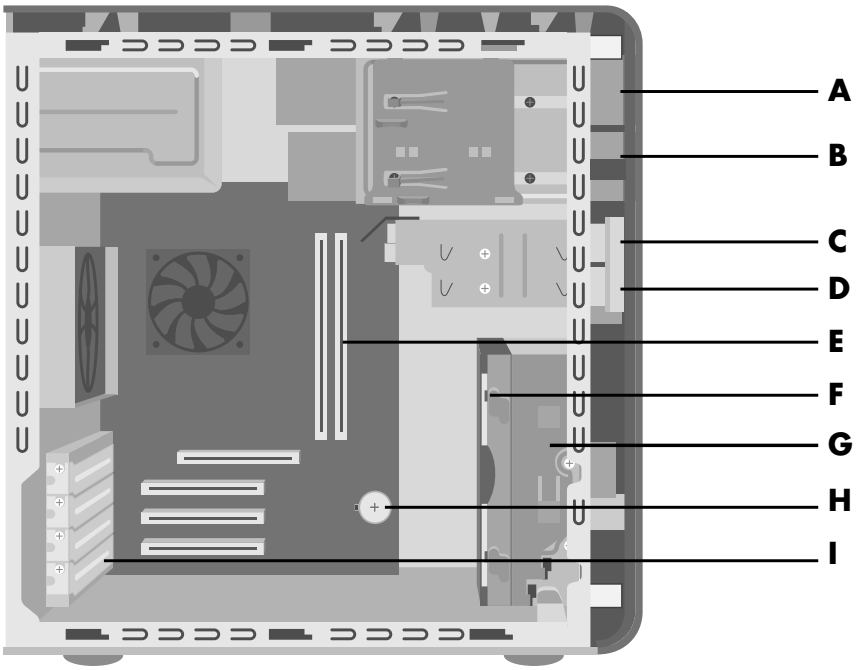
replacing the side panel

1 Align the notches inside the side panel with the holes on the chassis frame.
2 Slide the side panel forward on the frame until it locks into place, and then tighten the thumbscrews on the side panel.



3 See “after closing the pc” on page 105.

locating components inside the pc

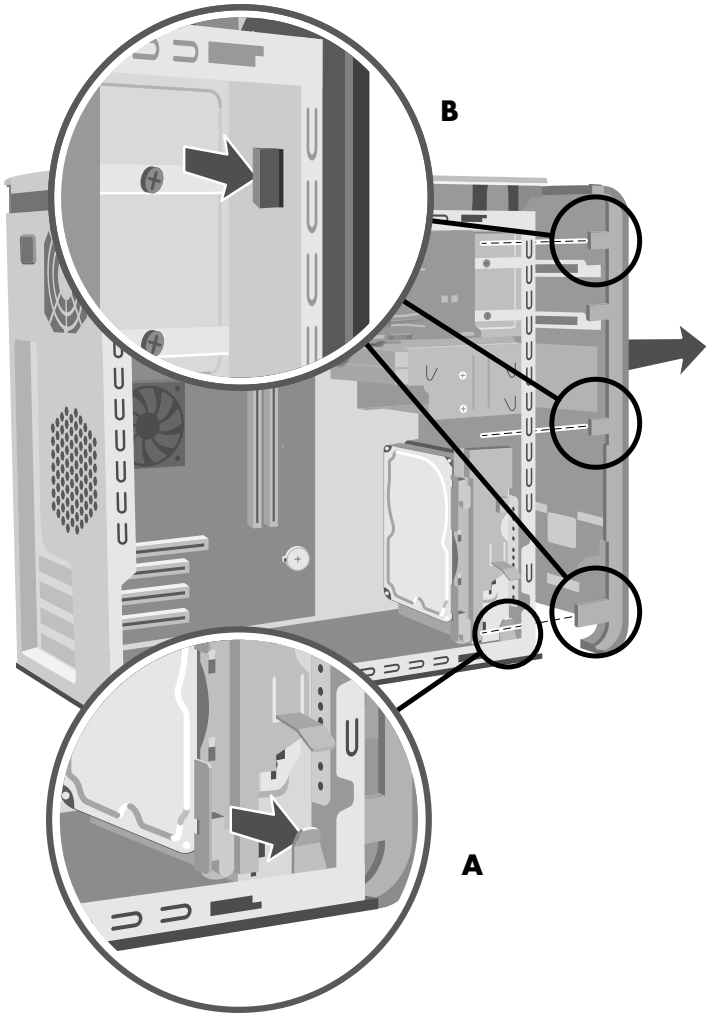


A Upper optical drive bay
B Lower optical drive bay
C Diskette (floppy) drive (select models), or 7-In-1 memory card reader (select models) or empty
D 7-In-1 memory card reader (select models) or empty
E Memory sockets
F Primary hard disk drive
G Expansion bay for second hard disk drive
H Lithium battery
I PCI/AGP Add-in card slots

removing the front panel

This procedure is only necessary when removing or replacing an optical drive, a 7-In-1 memory card reader, or a diskette drive.

1. Remove the side panel with the thumbscrews. See "removing the side panel" on page 105.
2. Unlock or pull back the front panel release tab (**A**). This tab is located at the bottom of the front panel, near the hard drive bracket. Pull the tab all the way back until the bottom of it rests against the frame of the chassis. The arrow mark on the release tab points to *unlock* when it is in the unlock position.



3. Locate the three small tabs (**B**) attached to the front panel on the side of the chassis. Press each tab away from the center of the chassis. Press the top, the middle, and the bottom tab, and then gently remove the front panel.

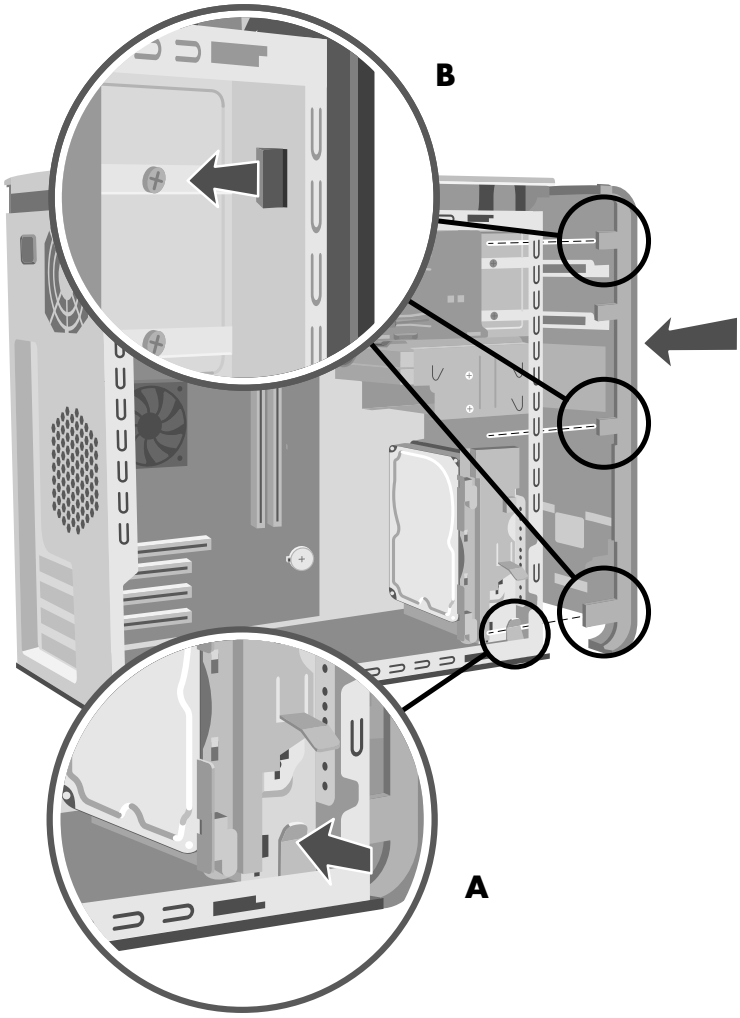
replacing the front panel

1 Place the chassis upright, and then align the bottom of the front panel with the ridge on the bottom of the chassis.

Or

Slide the bottom of the front panel under the bottom of the chassis, making sure the tab on the bottom of the front panel is inserted into the slot on the bottom of the chassis.

2 Guide the three small tabs (**B**) on both sides of the front panel into the correct holes, until the panel snaps into place.



3 Lock the front panel release tab (**A**) by pushing it until it rests against the hard drive bracket. The arrow mark on the release tab points to *lock* when it is in the lock position.

removing and replacing drives

Your PC includes several drives that you can replace or upgrade.

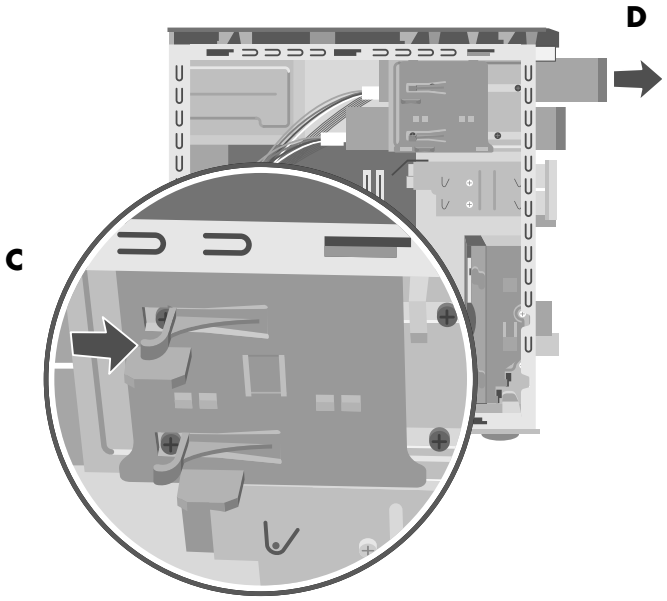
IMPORTANT: Before adding a new optical drive, make sure that it is compatible with the Microsoft Windows XP operating system. Also, make sure you have the correct software and drivers for the optical drive to work with the operating system.

Your PC model may come with:

- One or two optical drives (CD, DVD, CD-RW, DVD+RW, or combo). These drives are located in the two bays at the top of the chassis.
- One diskette drive (select models), or one 7-In-1 memory card reader (select models), or no drive (a blank) located directly under the lower optical drive bay.
- One 7-In-1 memory card reader (select models), or no drive (a blank) located under the diskette drive.
- One primary hard disk drive and an expansion bay for a second hard disk drive.

removing an optical drive

1. Remove the side panel that has thumbscrews. See page 105.
2. Remove the front panel. See page 107.
3. Gently lay the PC on its side.
4. Pull back on the plastic tab (**C**) on the side of the optical drive you want to remove. Push the drive partway out through the front of the PC (**D**).



5 Make a note of each cable and plug orientation attached to the back of the optical drive you want to replace before removing the cables.

6 Disconnect the power cable and data cable from the back of the optical drive you want to remove, using a gentle rocking motion. Some drive models may have a sound cable. If so, disconnect the sound cable.

7 Pull the drive out through the front of the PC (**D**).

installing an optical drive

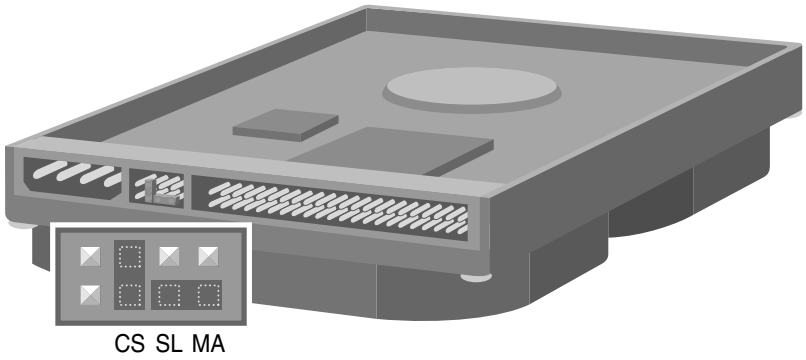
If you are adding a drive to an empty optical drive bay, you need to remove the drive cover:

1 Remove the side panel that has thumbscrews. See page 105.

2 Remove the front panel. See page 107.

3 If your optical drive bay is empty, remove the drive cover by pressing the tabs on each side of the drive cover, and then pulling it toward you and out of the PC.

4 Make sure the jumper on the new drive is in the CS (Cable Select) position.

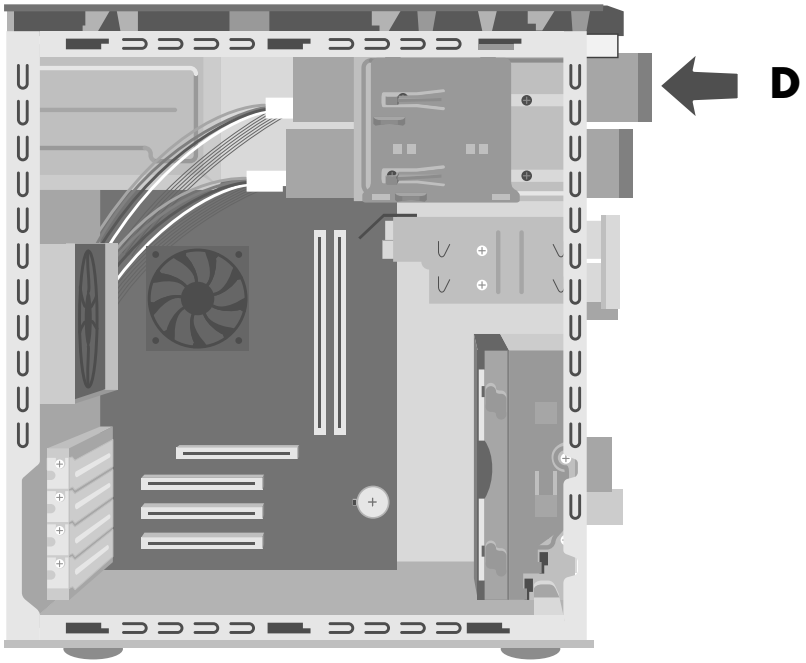


NOTE: A jumper is a small plastic connector or wire that electrically connects two pins in order to define a configuration setting. Below is an example of drive with Cable Select jumper installed (your drive may vary).

5 Slide the new optical drive through the front of the PC. Don't slide the drive in all the way; you need room to attach the cables.

6 Connect the power cable and data cable to the back of the optical drive. Some drive models may have a sound cable. If so, connect the sound cable.

7 Push the optical drive all the way in through the front of the PC until it snaps into place (**D**).



8 Replace the front panel. See page 108.

9 Replace the side panel. See page 106.

removing the 7-in-1 memory card reader or the diskette (floppy) drive

The PC has a removable drive cage that holds the 7-In-1 memory card reader and the diskette drive. You can remove and replace either of these drives if they are included with your model.

To ensure that the drive fits properly into the PC, be sure to purchase the replacement diskette drive from HP. Refer to the *Warranty & Support Guide* for contact information.

To remove the 7-In-1 memory card reader drive or the diskette drive:

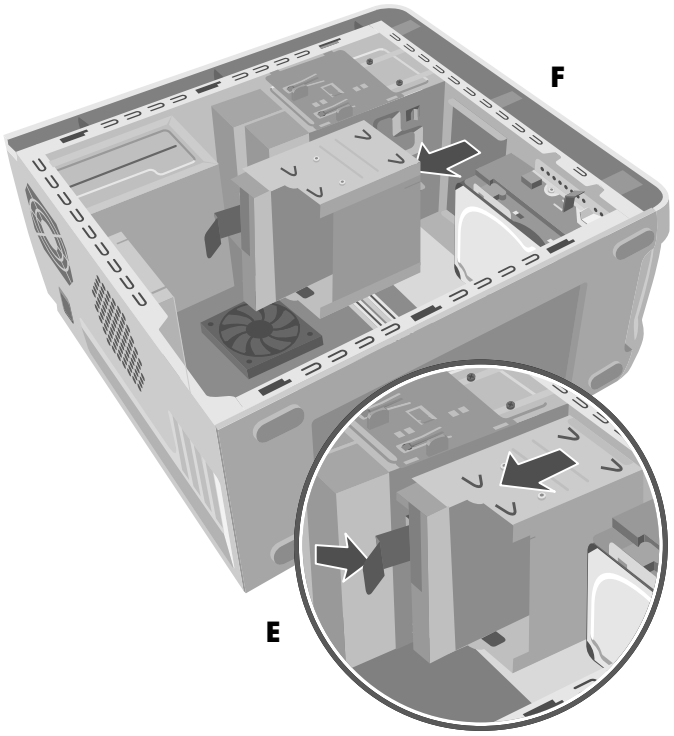
1 Remove the side panel that has thumbscrews. See page 105.

2 Gently lay the PC on its side.

3 Make a note of each cable attached to the drive you want to replace.

4 Push down on the drive cage release tab (**E**).

5 Hold the release tab down as you pull the cage toward the back of the chassis, and then lift it out (**F**). Removing the drive cage provides more space to remove the cables.

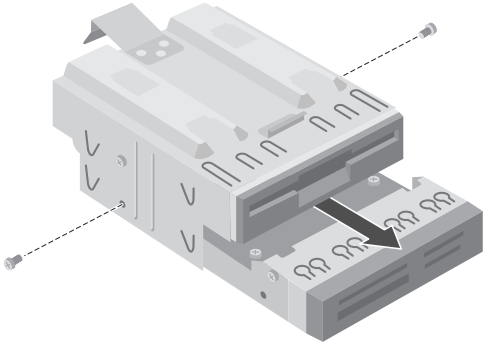


6 Remove the cables attached to the back of the drives in the drive cage.

7 Remove the screw from each side of the drive cage to remove the 7-In-1 memory card reader.

Or

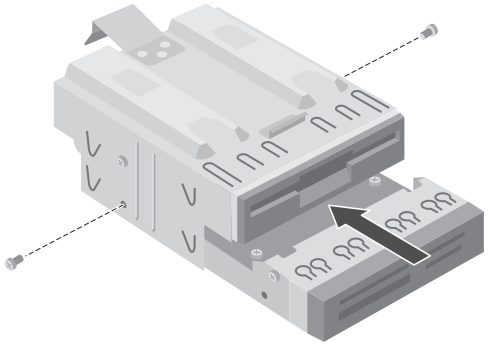
Remove the screw from each side of the drive cage to remove the diskette drive.



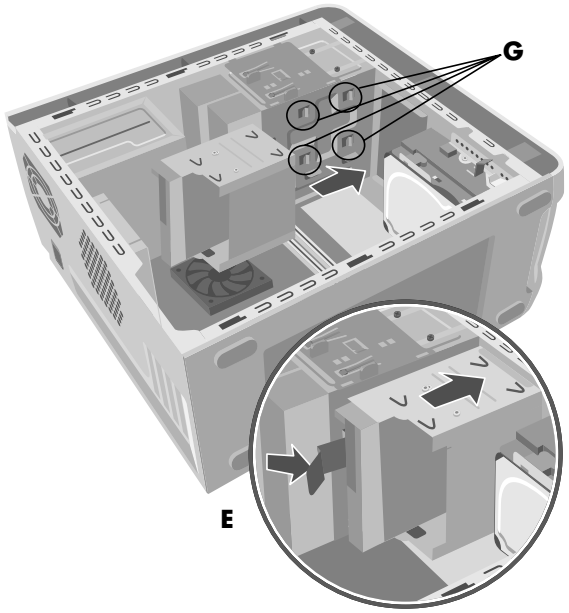
8 Pull the drive out through the front of the drive cage.

installing the 7-in-1 memory card reader or the diskette (floppy) drive

1. See "removing the 7-in-1 memory card reader or the diskette (floppy) drive" on page 111.
2. Slide the replacement drive into the drive cage until the two screw holes on each side are aligned.
3. Attach the screw on each side of the drive cage.



4. Pull the drive cage release tab (**E**) back. Align the four holes on the top of the drive cage with the four hooks (**G**) on the bottom of the optical drive bracket. Slide the drive cage so that the hooks go into the holes on the drive cage, and then push the drive cage forward until it snaps into place.



5. Connect the cables to the back of the drive you installed.
6. Replace the side panel. See page 106.

removing the preinstalled hard drive

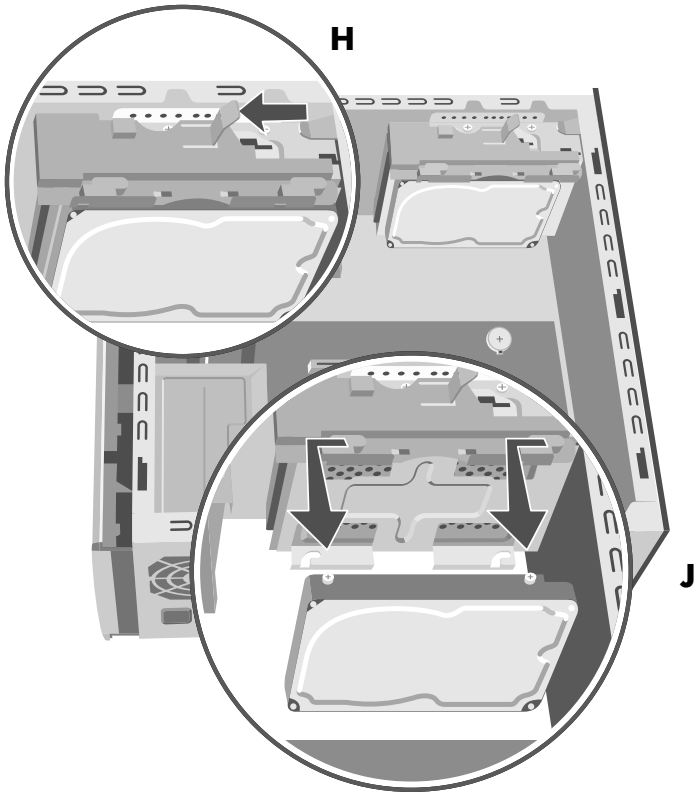
You can replace the preinstalled (primary) hard drive or install a second hard drive in the PC.

You need to remove the primary hard drive from the chassis if you want to replace it with a higher-capacity drive, or if you want to safeguard your data when sending the PC out to be repaired.

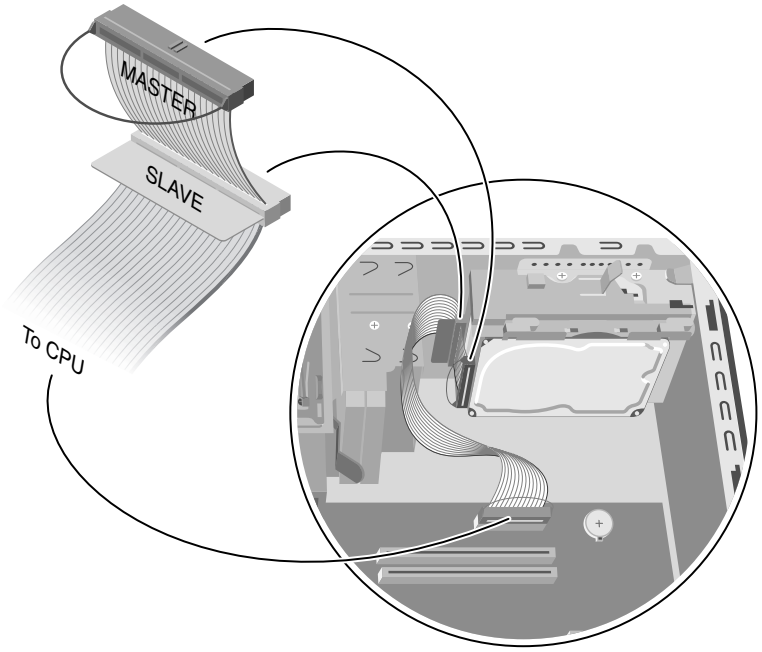
The preinstalled hard drive is preloaded with the system recovery partition of your PC. If you remove this hard drive, please store in an antistatic bag that is properly sealed.

To remove the preinstalled hard drive:

1. Remove the side panel that has thumbscrews. See page 105.
2. Gently lay the PC on its side.
3. Make a note of each cable attached to the hard drive before removing the cables.
4. Push the release tab attached to the hard drive bracket (**H**) until it is unlocked. Gently push the hard drive in the same direction and then pull it out of the hard drive bracket (**J**).



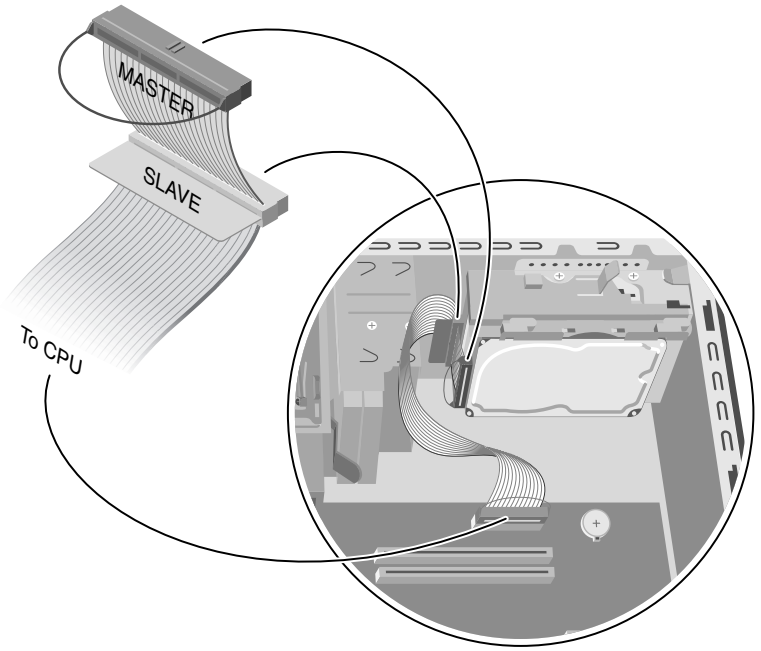
5 Remove the cables from the back of the hard drive.



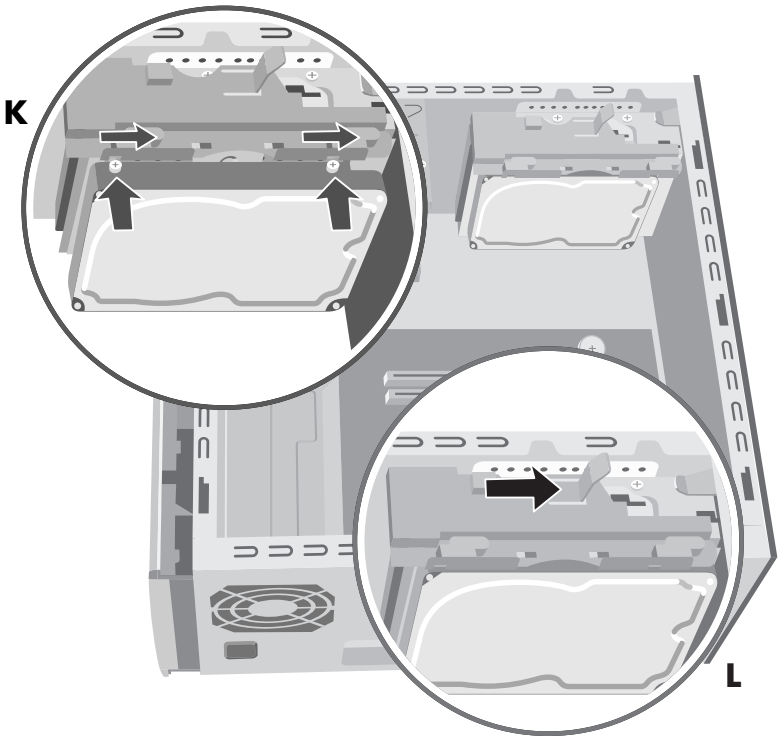
replacing the preinstalled hard drive

1. Make sure the release tab on the hard drive bracket is in the unlocked position before you insert the new hard drive.
2. Attach the IDE and power supply cables to the back of the hard drive.

WARNING: Make sure the IDE cable end labeled *Master* is connected to the primary hard drive. If you have a second hard drive, make sure the IDE cable labeled *Slave* is connected to the second hard drive. If the IDE cable is not connected correctly, the PC will not be able to locate the hard drives and data may be lost.



3 Align the two screws on the top and two screws on the bottom of the replacement hard drive with the screw head tracks on the top and bottom of the hard drive bracket. Slide the hard drive until it snaps into place (**K**).



4 Push the release tab on the top of the hard drive bracket into the locked position (**L**).

5 Replace the side panel. See page 106.

installing a second hard drive

Some PC models may have an empty bay to add a second hard drive. You must provide the drive and four 6/32 x ¼" screws (length of ¼-inch is 0.64 cm) to secure the drive to the chassis.

1 Remove the side panel. See page 105.

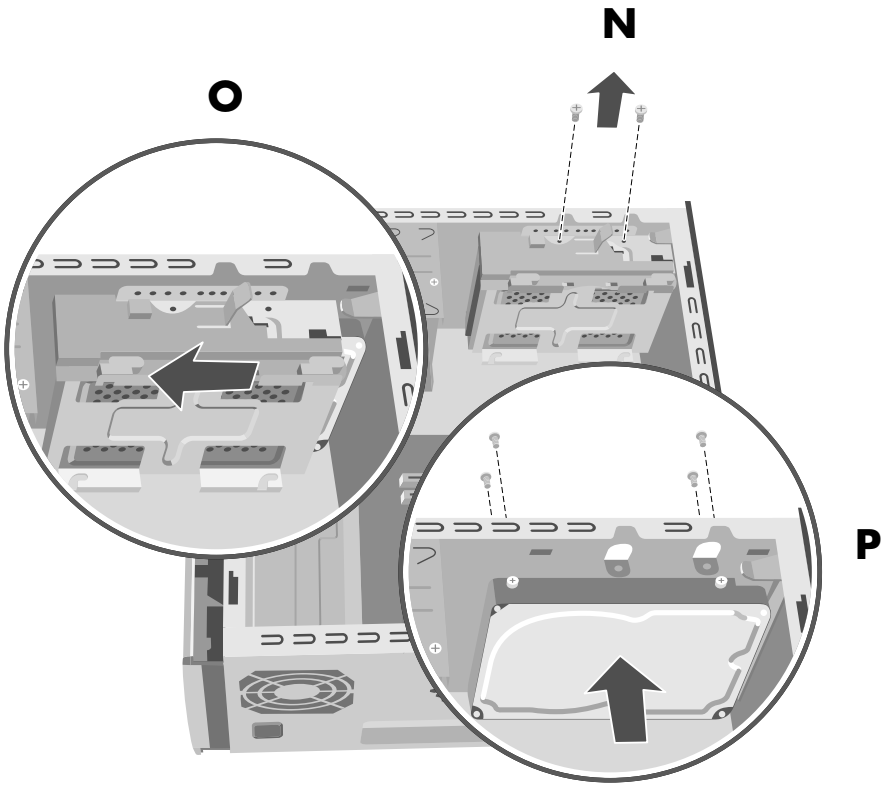
2 Remove the front panel. See page 107.

3 Gently lay the PC on its side.

4 See "removing the preinstalled hard drive" on page 114.

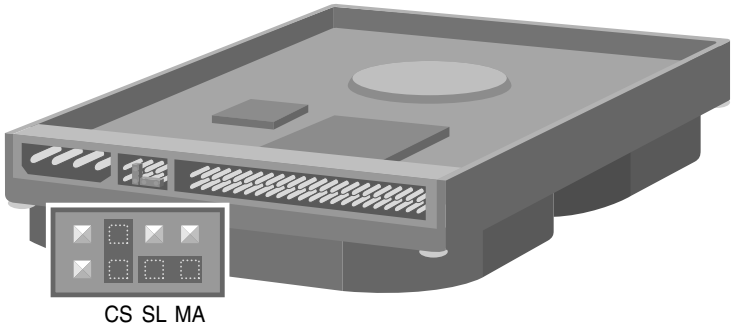
NOTE: You do not need to remove the preinstalled hard drive from the bracket when installing a second hard drive.

5 Remove the two screws on the hard drive bracket (**N**).



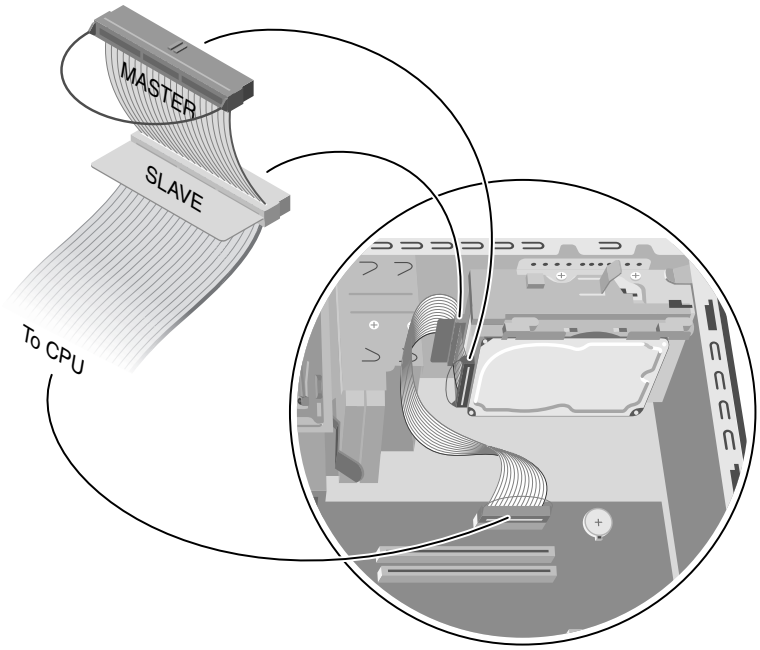
6 Slide the bracket away from the bottom of the chassis, and then pull it up and out of the chassis (**O**).

7 Make sure the jumper on the new drive is in the CS (Cable Select) position. Below is a drive with a Cable Select jumper installed. Your drive may vary.



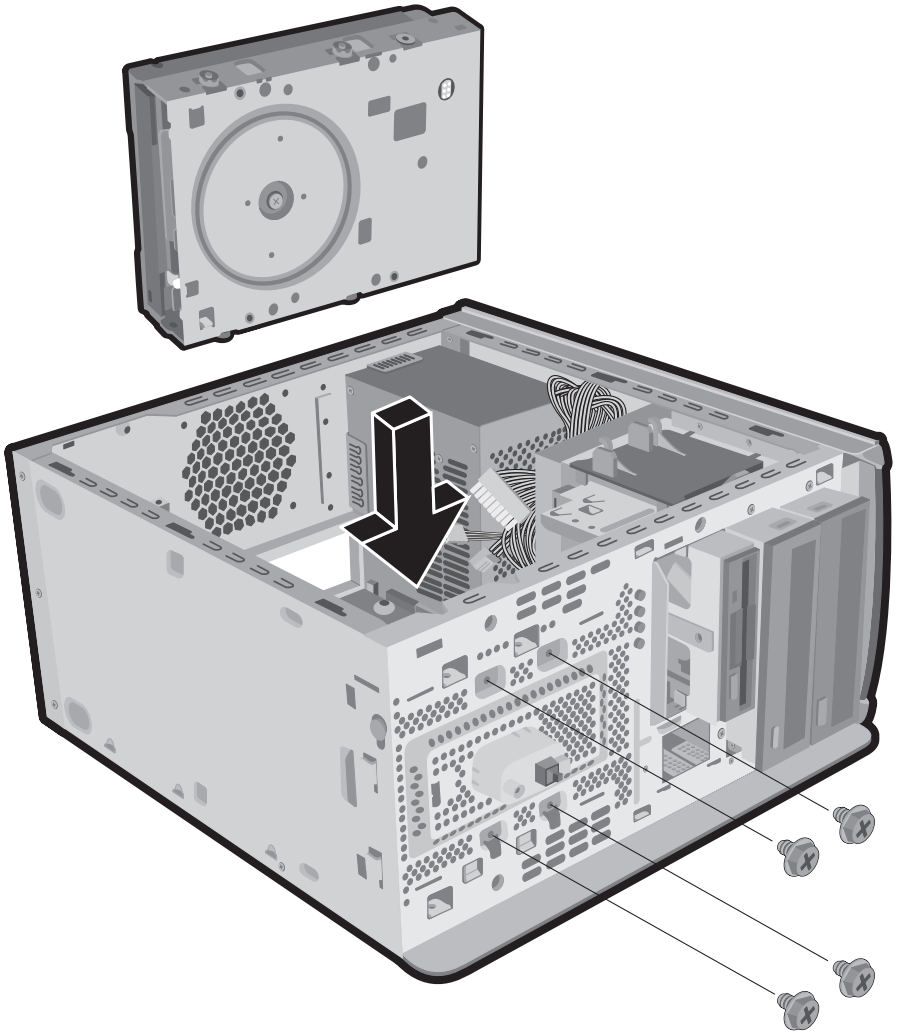
8 Attach the power cable to the back of the drive.

9 Make sure you attach the connector marked *Master* on the IDE ribbon cable to the back of the primary hard drive. After this primary connection is attached, twist the remaining part of the cable marked *Slave* on that same IDE ribbon cable and connect it to the second hard drive.



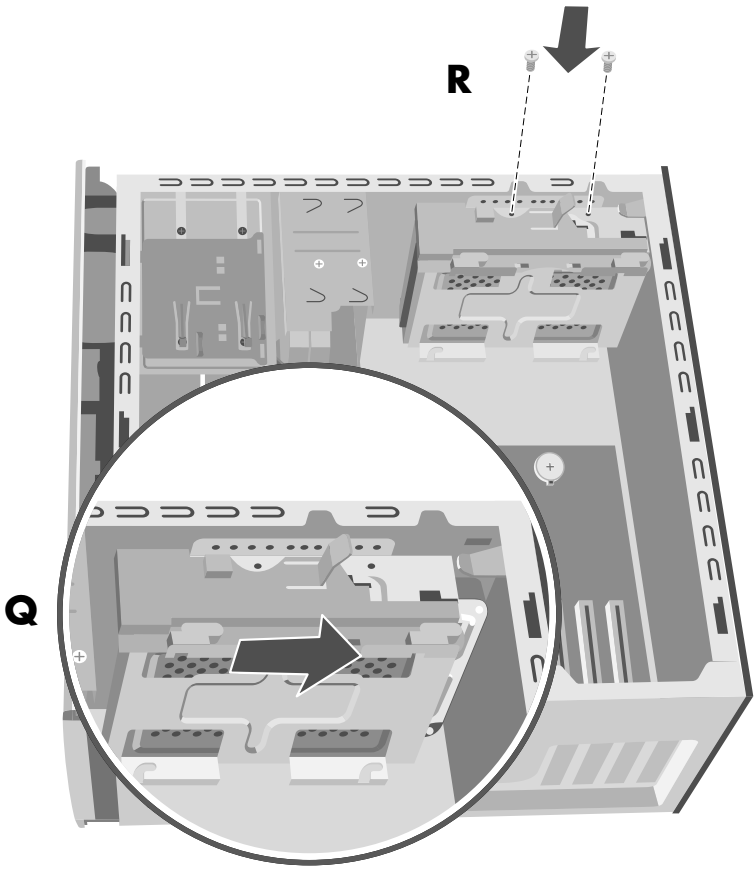
WARNING: Make sure the IDE cable end labeled *Master* is connected to the primary hard drive. If you have a second hard drive, make sure the IDE cable labeled *Slave* is connected to the second hard drive. If the IDE cable is not connected correctly, the PC will not be able to locate the hard drives and data may be lost.

10 Place the second hard drive inside the chassis and align it to the screw holes (**P**) on the front of the chassis. Use four regular 6/32 x ¼″ (equivalent length is 0.64 cm) screws (not included with your PC) to secure the hard drive to the front of the PC. Insert the screws from the front of the PC chassis into the drive. Tighten the screws.



11 Connect the end of the IDE cable labeled *CPU* to the motherboard.

12 Place the hard drive bracket over the new second hard drive, align the four tabs to the holes on the front of the chassis, and then slide it toward the bottom of the chassis until it snaps into place (**Q**).



13 Attach the two screws to the hard drive bracket (**R**).

14 Replace the preinstalled hard drive. See page 116.

15 Replace the front panel. See page 108.

16 Replace the side panel. See page 106.

removing a second hard drive

1 Remove the side panel. See page 105.

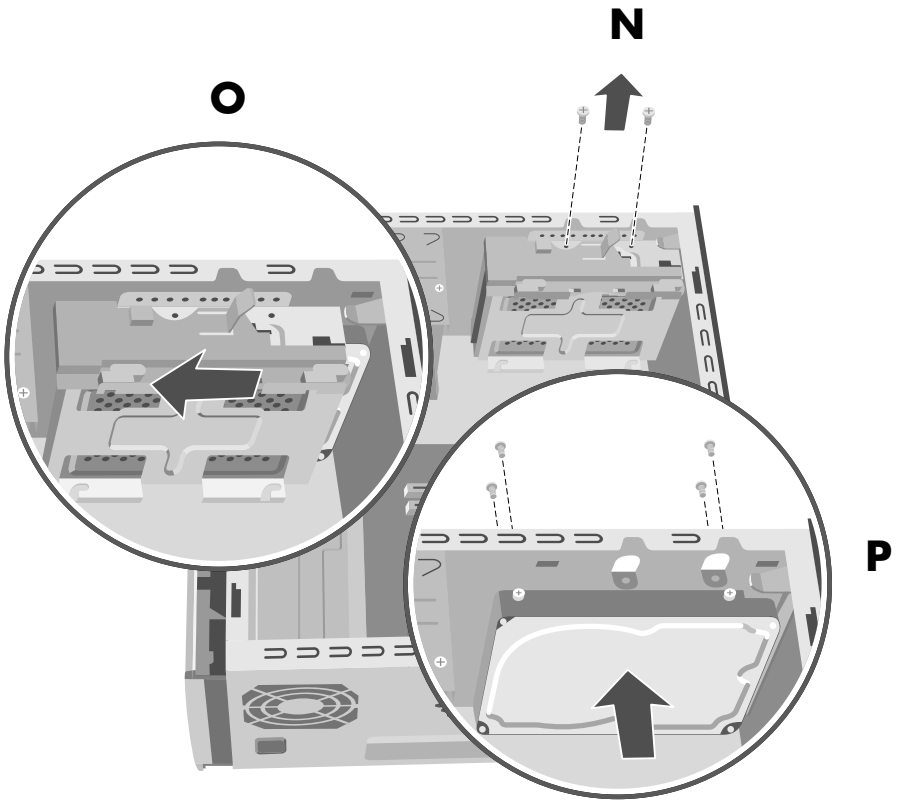
2 Remove the front panel. See page 107.

3 Gently lay the PC on its side.

4 See "removing the preinstalled hard drive" on page 114.

NOTE: You do not need to remove the preinstalled hard drive from the bracket when installing a second hard drive.

5 Remove the two screws on the hard drive bracket (**N**).



6 Slide the bracket away from the bottom of the chassis (**O**), and then pull it up and out of the chassis.

7 Remove the four screws on the front of the chassis to release the hard drive from the front of the chassis (**P**). Pull the hard drive out of the chassis.

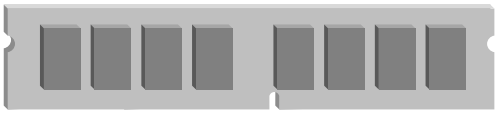
8 Make a note of each cable attached to the second hard drive before removing the cables. Remove the IDE and power cables from the back of the second hard drive.

adding memory

The motherboard contains sockets for DDR DIMMs (double data rate dual in-line memory modules).

To determine the memory capacity and speed of the memory module your PC model uses, and for specific memory module information and specifications go to the Web site listed in your *Warranty & Support Guide* and click the Support link.

The motherboard contains 184-pin DDR DIMM sockets. The number of sockets depends on which model you have.



DDR DIMM

WARNING: Using the wrong type of memory module could damage the system.

about installing ddr dimms

DDR DIMMs must be 184-pin unbuffered DDR SDRAM (double data rate synchronous dynamic random access memory). The HP Pavilion ships with one or more memory modules, but you can replace the existing memory modules with higher-capacity ones. You can install 128 MB, 256 MB, 512 MB, or 1024 MB (1GB) memory modules in the PC.

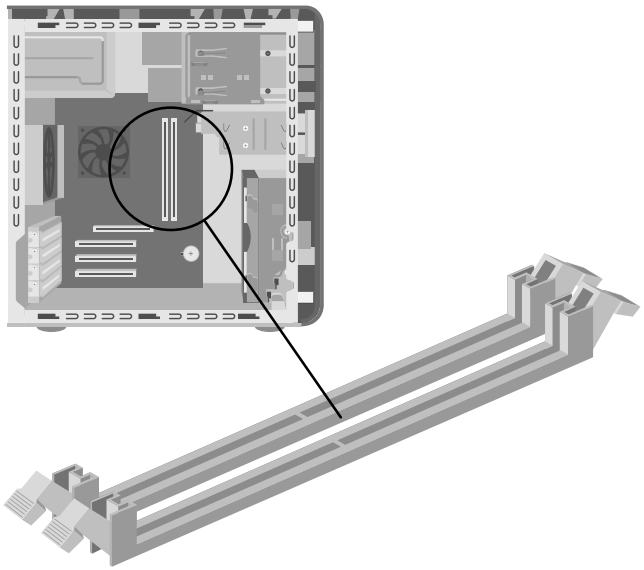
NOTE: Some memory configurations vary, depending on your PC model. 512 MB and 1024 MB DDR DIMM memory modules are not compatible with all PC models.

removing a memory module

1 Remove the side panel that has thumbscrews. See page 105.

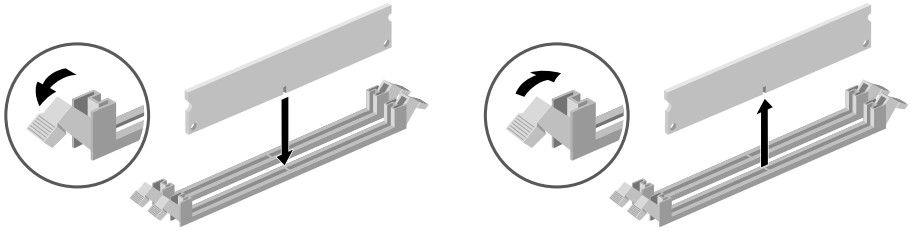
2 Gently lay the PC on its side.

3 Locate the memory sockets on the motherboard.



4 Move any cabling out of the way, if necessary.

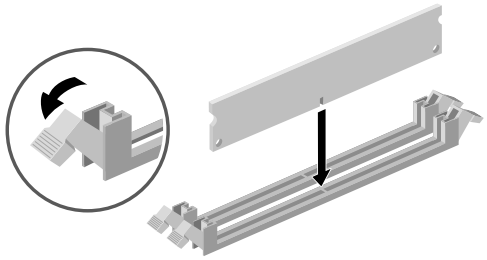
5 Push down the two retaining clips on the ends of the socket until the memory module pops out of the socket. Hold the memory module by its edges only, as you lift it away from the socket. Store it in its antistatic packaging.



WARNING: Do not pull the memory module out of the socket. Use the retaining clips to eject the module.

installing a memory module

1. See "removing a memory module" on page 124.
2. Holding the new memory module by its edges only, remove it from the antistatic packaging. (Avoid touching the memory chips or the gold contacts on the module.) The memory module has one or two small notches on the lower edge, which fit into raised bumps in the memory socket.
3. Hold the memory module in alignment with the socket, aligning the notches with the bumps.
4. Push straight down on top of the memory module until it is fully seated in the socket. The retaining clips on the ends of the socket automatically lock it into position when the memory module is fully seated.



5. Replace any cabling that was removed.
6. Replace the side panel. See page 106.

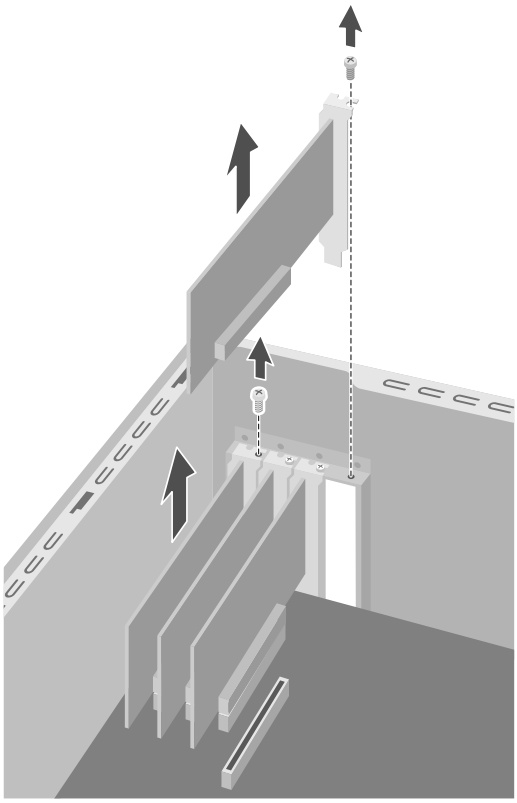
add-in cards

At some point, you may want to add a PCI or an AGP card to the PC to accommodate a new component, such as a scanner, or to upgrade an existing card.

WARNING: Do not overload the system by installing add-in cards that draw excessive current. The system is designed to provide 2 amps (average) of +5 V power for each board/card in the PC. The total +5 V current draw in a fully loaded system (one with all add-in card slots filled) must not exceed the total number of slots multiplied by 2 amps.

removing an add-in card

1. Remove the side panel that has thumbscrews. See page 105.
2. Gently lay the PC on its side.
3. To prepare an empty card slot for a new card, loosen the screw of the expansion slot cover. Remove the cover of the empty slot.
4. If you are replacing a card, make a note of any external or internal cables attached to the card, and then disconnect them.
5. Loosen the screw on the bracket of the card you are replacing.

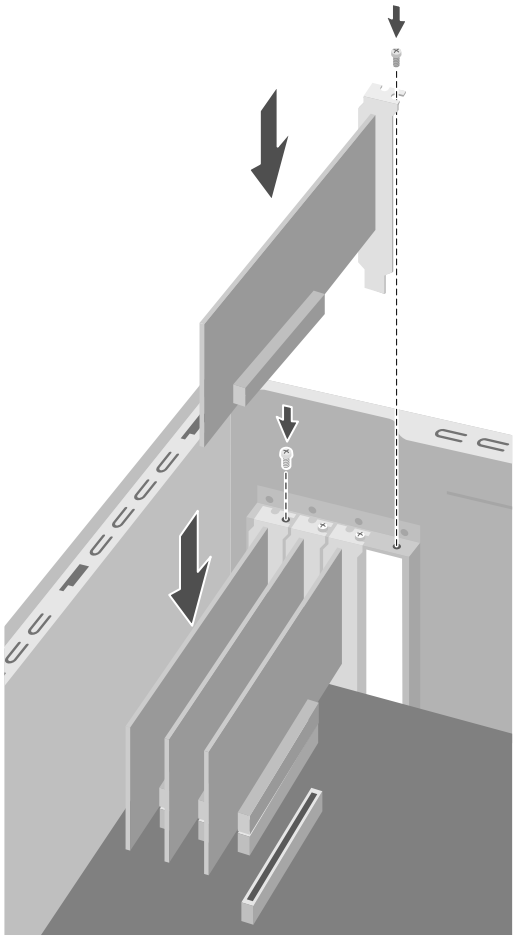


6. Hold the bracket and the far top corner of the card. Carefully remove the card by pulling the card straight out of the expansion slot.

WARNING: Be careful of the sharp edges on the expansion slot cover.

installing an add-in card

1 Insert the new card into the slot and push straight down. Make sure the card is properly seated.



2 Attach the screw to secure the card you have replaced.

3 Connect any external or internal cables attached to the card.

4 Replace the side panel. See page 106.

NOTE: If the new card or device isn't working, read through the card manufacturer's installation instructions, and recheck all connections, including those to the card, power supply, keyboard, and monitor. If the problem still exists, run the BIOS setup program and load the default settings, and then save and exit.

---

replacing the battery

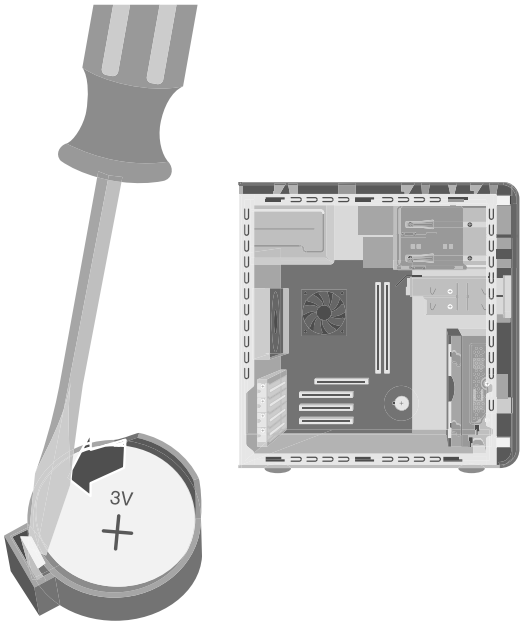
A lithium battery on the motherboard provides backup power for the PC's timekeeping capability. The battery has an estimated life expectancy of seven years.

When the battery starts to weaken, the date and time may be incorrect. If the battery fails, replace it with a CR2032 lithium battery (3 volt, 220mAH rating) or an equivalent battery.

WARNING: There is danger of explosion if the battery is incorrectly replaced. Replace only with the same, or equivalent, type of battery. Discard used batteries according to the manufacturer's instructions.

To replace the battery:

1. Remove the side panel that has the thumbscrews. See page 105.
2. Gently lay the PC on its side.
3. Remove any cabling, if necessary, to reach the battery.
4. Remove any memory modules, if necessary, to reach the battery.
5. With a flat screwdriver, press the metal latch that holds the battery in its socket away from the battery. The battery will pop out.



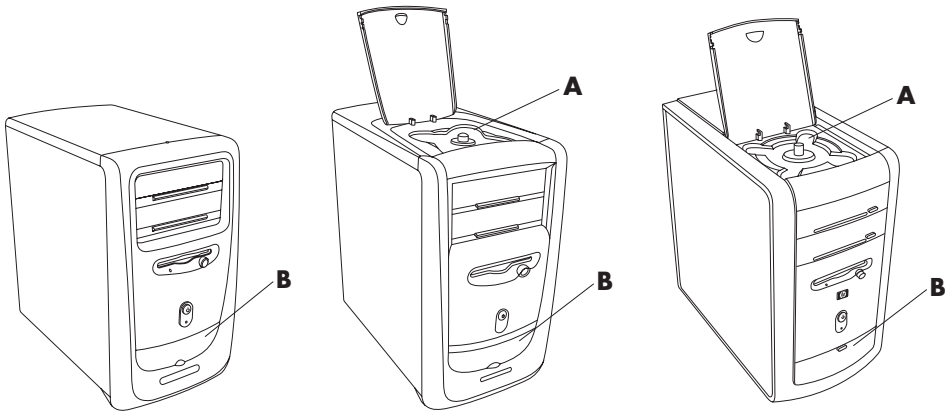
6. Install the new CR2032 battery in the socket, with the positive (+) side facing up.

upgrading and servicing the pc (2)

chassis features of the pc

Before you begin, identify your computer chassis using the illustrations below.

On the top of some computers is a CD holder (**A**). You can store CDs inside this compartment, so you can quickly locate them. This feature is not available on all models. To connect components to the front of the PC, flip open the port cover (**B**) and plug the cables into the corresponding connectors.



Chassis I **Chassis II** **Chassis III**

NOTE: The power supply is pre-set for the country/region in which you purchased the PC. If you move to another location, please make sure you check the voltage requirements in the country/region you reside before turning on the PC.

opening the computer

WARNING: The PC is heavy; be sure to use ergonomically correct lifting procedures when moving the computer.

WARNING: Electrostatic discharge (ESD) can damage disk drives, add-in cards, and other components. If an ESD station is not available, wear a wrist strap attached to a metal part of the computer. Place cards on a conductive foam pad or inside the conductive wrapper they came in; do not place the cards on top of the wrapper.

WARNING: Do not operate the system with the cover removed. Always replace the cover before turning on the system.

before you begin

Read the following items before attempting to upgrade or service the computer:

- These procedures assume familiarity with the general terminology associated with personal computers and with the safety practices and regulatory compliance required for using and modifying electronic equipment.
- Set up an equipment log to record the system model and serial numbers, all installed options, and other information about the system. If you need this information, it will be easier to consult the log than to open up and examine the system.
- HP recommends that you use an antistatic wrist strap and a conductive foam pad when working on the system.
- Disconnect the system from any telecommunications links, networks, or modems, and then disconnect the system power source before performing any of the procedures described in this guide. Failure to do so before you open the system or do any procedures can result in personal injury or equipment damage.

NOTE: Disconnect the modem/telephone cable *before* disconnecting the power cord from the PC.

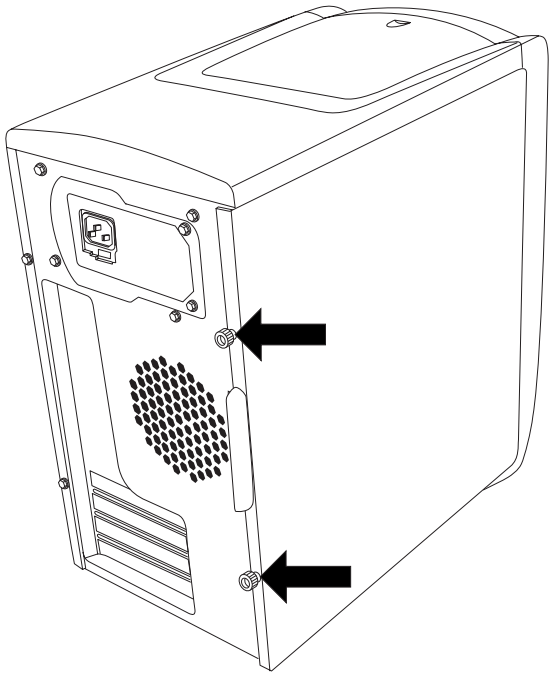
To gain access to the inside of the computer, remove the side panel.

WARNING: Before installing and connecting your system to the electrical power system, please read the safety information in the *Warranty & Support Guide*.

removing the side panel

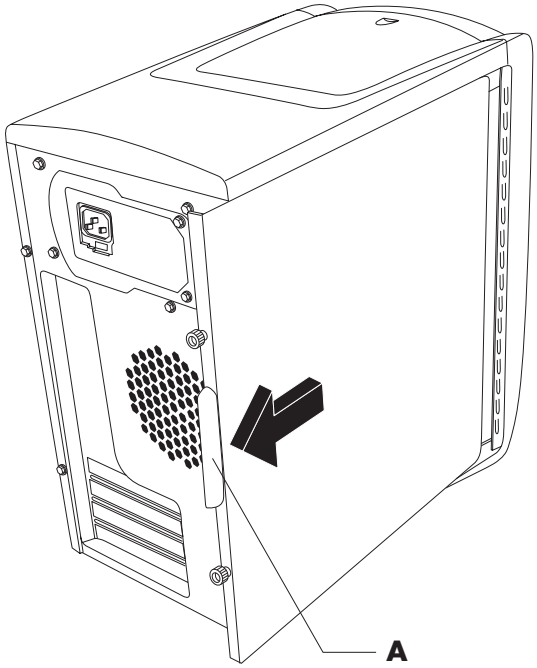
You must remove the side panel to add memory, insert add-in cards, install or remove drives, or change the battery:

1. Turn off the computer and all peripherals.
2. Disconnect the modem/telephone cable.
3. Disconnect the power cord and all other attached cables (such as the keyboard, mouse, and monitor).
4. Loosen the two thumbscrews on the right side of the back panel. The first time you loosen these screws you'll need a flathead screwdriver. (These screws do not detach; they'll stay on the side panel loosely until you tighten them again.)



5. Stand behind the computer, and place one hand on top of the chassis.

6 Grasp the handle (**A**) with your other hand and pull the panel toward you until it stops.



7 Lift the panel up and out. Set the panel aside.

removing the fan duct

NOTE: If your computer does not have a fan, skip this procedure.

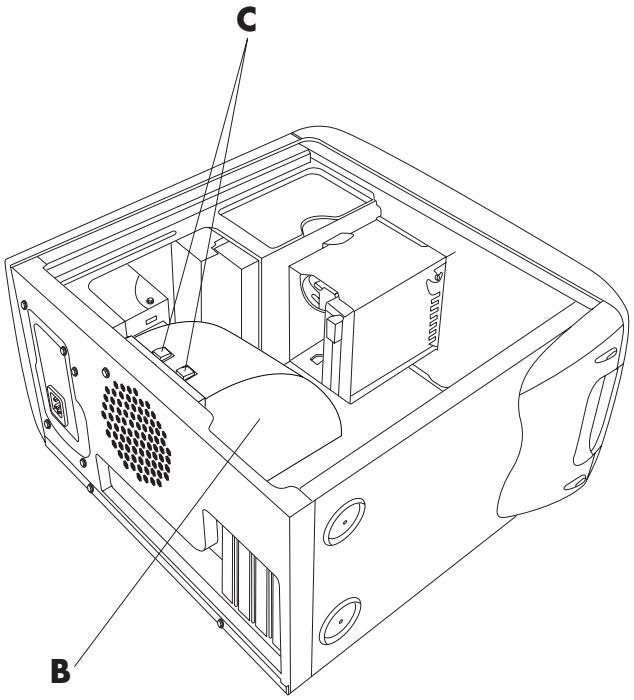
To access some components on the motherboard, you may need to remove the fan duct.

NOTE: Make sure the computer is turned off and the modem/telephone cable and power cord are disconnected from the computer.

1 Remove the side panel (see "removing the side panel" on page 131).

2 Gently lay the computer on its side.

3 To disengage the fan duct (**B**), push down the two tabs (**C**). You can push with your fingers or a pen.



4 Rotate the fan duct down and out to remove it from the chassis.

removing the drive cage

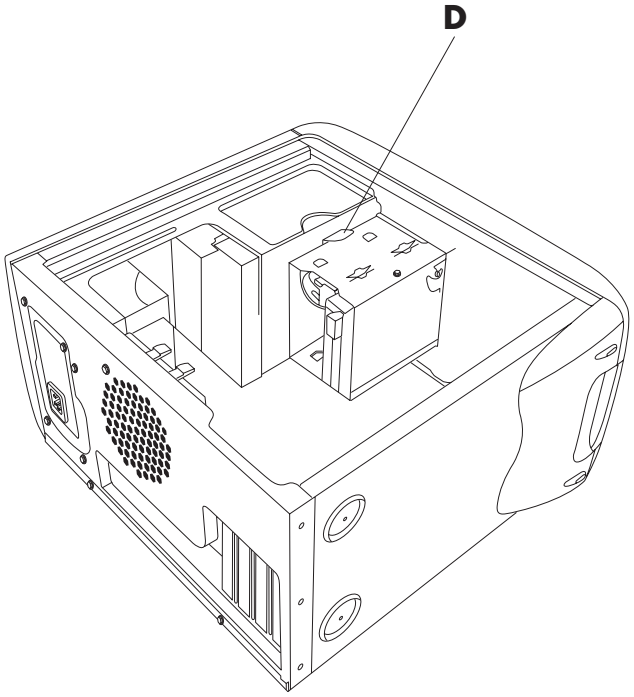
The PC has two drive cages. The top cage that holds the CD or DVD drive(s) is stationary. The bottom cage that holds the diskette drive and hard drive is removable. You may need to remove this bottom drive cage to access internal components or to add or replace a hard drive.

NOTE: Make sure the computer is turned off and the modem/telephone cable and power cord are disconnected from the computer.

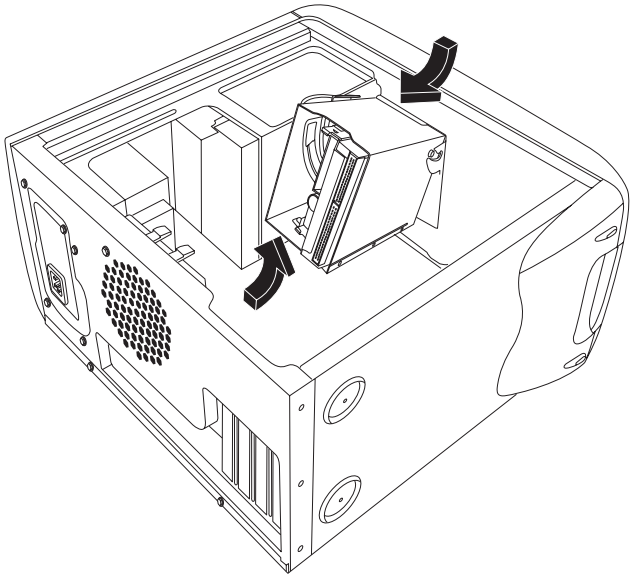
---

1 Remove the side panel (see "removing the side panel" on page 131).
2 Gently lay the computer on its side.
3 Remove the fan duct (see "removing the fan duct" on page 132).
4 Remove the power and IDE cables from the back of the diskette and hard drives. Make note of each connection before disconnecting the cables.

5 Push down on the drive cage release tab (**D**).



6 Hold the release tab down as you rotate the cage up and lift it out.

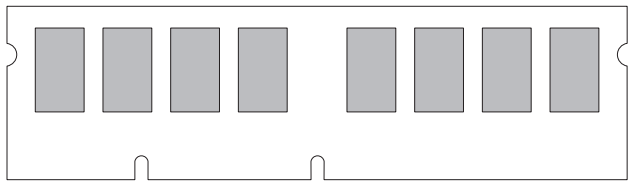


adding memory

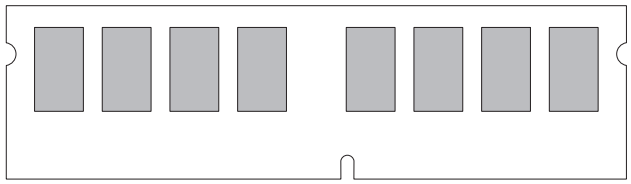
The motherboard contains sockets for either DIMMs (dual in-line memory modules), or DDR DIMMs (double data rate dual in-line memory modules), depending on which PC model you have.

To determine which type of memory module your PC uses, and for specific memory module information and specification, go to the Web site listed in your *Warranty and Support Guide* and click the Support link.

The motherboard contains 168-pin DIMM sockets or 184-pin DDR DIMM sockets. The exact number of sockets depends on which model you have.



DIMM



DDR DIMM

WARNING: Using the wrong type of memory module could damage the system.

dimms

DIMMs must be 168-pin unbuffered SDRAM (synchronous dynamic random access memory), compliant with the Intel® *PC SDRAM Unbuffered DIMM Specification*. The PC ships with one or more memory modules, but you can replace the existing memory module(s) with higher-capacity ones. You can install 64 MB, 128 MB, 256 MB, or 512 MB memory modules in the computer.

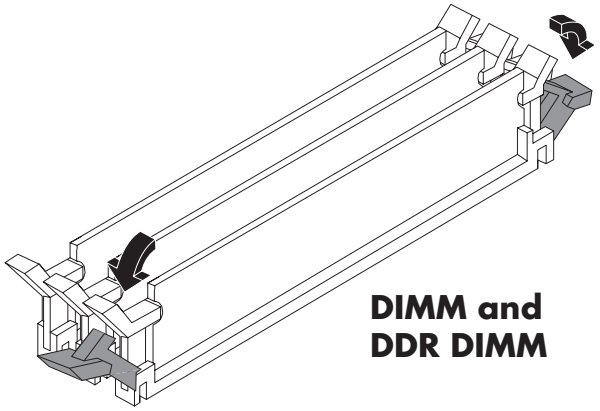
NOTE: 256 MB configurations vary depending on your computer model. 256 MB and 512 MB DIMM memory modules are not compatible with all computer models.

ddr dimms

DDR DIMMs must be 184-pin unbuffered DDR SDRAM (double data rate synchronous dynamic random access memory). The PC ships with one or more memory modules, but you can replace the existing memory module(s) with higher-capacity ones. You can install 64 MB, 128 MB, 256 MB, or 512 MB memory modules in the computer.

installing a memory module

1. Turn off the computer and all peripherals.
2. Disconnect the modem/telephone cable.
3. Disconnect the power cord and all other attached cables (such as the keyboard, mouse, and monitor).
4. Remove the side panel and the fan duct (see "removing the side panel" on page 131 and "removing the fan duct" on page 132).
5. Locate the memory sockets on the motherboard.



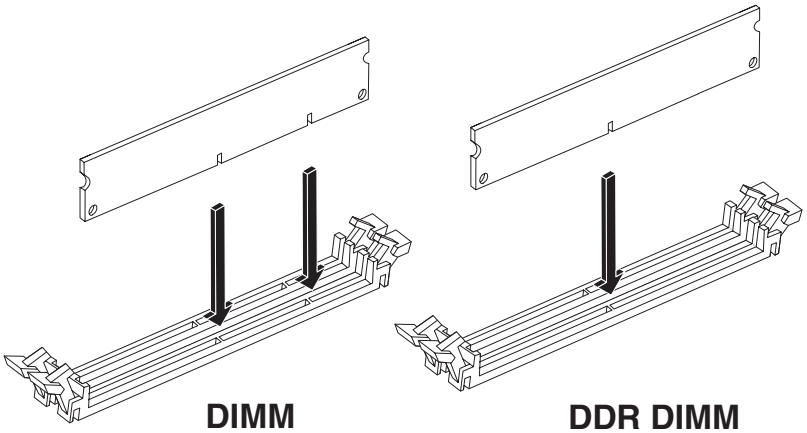
DIMM and DDR DIMM

NOTE: If all of the memory sockets are filled, you need to remove one of the memory modules (see "removing a memory module" on page 138).

6. Move any cabling out of the way, if necessary.
7. Push down the two retaining clips on the ends of the memory socket.

8 Holding the new memory module by its edges only, remove it from the antistatic packaging. (Avoid touching the memory chips or the gold contacts on the module.) The memory module has one or two small notches on the lower edge that fit into raised bumps in the memory socket.

9 Hold the memory module in alignment with the socket, aligning the notches with the bumps.



10 Push straight down on top of the memory module until it is fully seated in the socket. The retaining clips on the ends of the socket automatically lock it into position when the memory module is fully seated.

To reassemble the computer:

1 If you moved any cabling, restore the cable connections and routing.

2 Replace the fan duct and the side panel (see "closing the computer" on page 150).

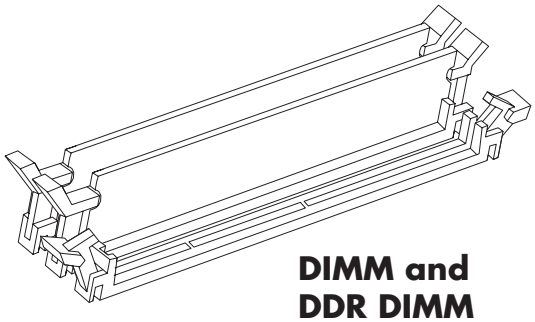
3 Reconnect the power cord and all other cables.

4 Reconnect the modem/telephone cable.

5 Turn on the computer and all peripherals.

removing a memory module

1. Turn off the computer and all peripherals.
2. Disconnect the modem/telephone cable.
3. Disconnect the power cord and all other attached cables (such as the keyboard, mouse, and monitor).
4. Remove the side panel and the fan duct (see "removing the side panel" on page 131 and "removing the fan duct" on page 132).
5. Locate the memory sockets on the motherboard.
6. Move any cabling out of the way, if necessary.
7. Push down the two retaining clips on the ends of the socket until the memory module pops out of the socket.



DIMM and DDR DIMM

WARNING: Do not pull the memory module out of the socket. Use the retaining clips to eject the module.

8. Holding the memory module by its edges only, lift it away from the socket. Store it in its antistatic packaging.

To install a new memory module in this socket, see "installing a memory module" on page 136.

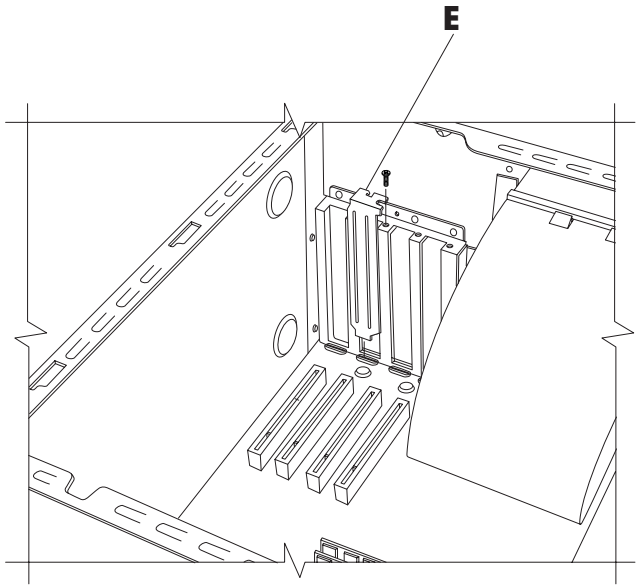
installing add-in cards

At some point, you may want to add a PCI or AGP card to the computer to accommodate a new component, such as a scanner, or to upgrade an existing card.

WARNING: Do not overload the system by installing add-in cards that draw excessive current. The system is designed to provide 2 amps (average) of +5 V power for each board/card in the computer. The total +5 V current draw in a fully loaded system (one with all add-in card slots filled) must not exceed the total number of slots multiplied by 2 amps.

To add or replace an add-in card:

1. Turn off the computer and all peripherals.
2. Disconnect the modem/telephone cable.
3. Disconnect the power cord and all other attached cables (such as the keyboard, mouse, and monitor).
4. Remove the side panel (see "removing the side panel" on page 131).
5. Gently lay the computer on its side.
6. To prepare an empty card slot for a new card, loosen the screw of the expansion slot cover of the empty slot (**E**). Remove the expansion slot cover of the empty slot.



WARNING: Be careful of the sharp edges on the expansion slot cover.

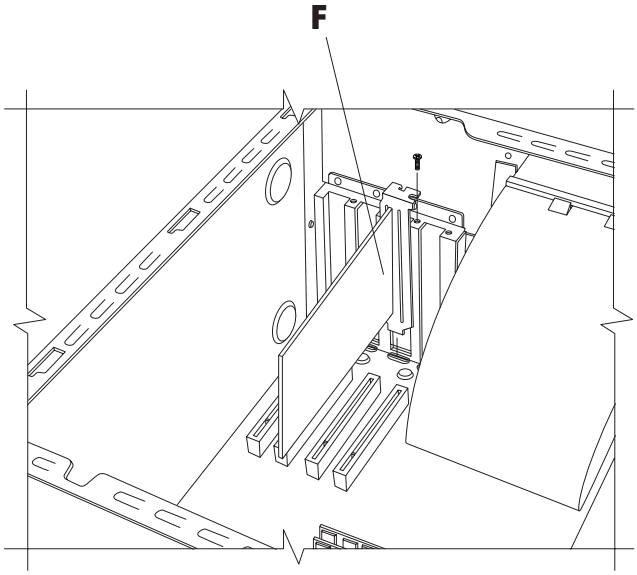
7 If you are replacing a card, disconnect any external and/or internal cables attached to the card.

8 Loosen the screw on the bracket of the card you are replacing (**F**).

9 Hold the metal bracket and the far top corner of the card. Carefully remove the card by pulling the card straight out of the expansion slot.

10 Insert the new card into the slot and push straight down. Make sure the card is properly seated.

11 Attach the screw to secure the card you have replaced (**F**).



To reassemble the computer:

1 Replace the side panel (see "replacing the side panel" on page 154).

2 Reconnect the power cord and all other cables.

3 Reconnect the modem/telephone cable.

4 Turn on the computer and all peripherals.

5 Install any software drivers supplied by the card manufacturer.

what is plug and play?

"Plug and Play" describes the ability to add and remove add-in cards, memory, and peripherals without any special procedures (such as resetting jumpers and testing for system conflicts). The system BIOS (basic input/output system) finds these components and adds them to the system. You do not have to run the BIOS setup program.

if the new card or device isn't working

Read through the card manufacturer's installation instructions, and recheck all connections, including those to the card, power supply, keyboard, and monitor. If the problem still exists, run the BIOS setup program and load the default settings, and then save and exit.

adding and removing drives

You can install a second hard drive into the system or replace the existing hard drive. In addition, you can replace the existing diskette or optical drives.

installing a second hard drive

The PC has an empty 3.5-inch drive bay to accommodate an additional hard drive.

1. Turn off the computer and all peripherals.
2. Disconnect the modem/telephone cable.
3. Disconnect the power cord and all other attached cables (such as the keyboard, mouse, and monitor).
4. Remove the side panel (see "removing the side panel" on page 131).
5. Remove the drive cage (see "removing the drive cage" on page 133).

NOTE: Make sure the jumper on the new drive is in the CS (Cable Select) position.

---

6. Slide the new drive into the empty bay in the drive cage, until the screw holes align.
7. Install the two screws on the top of drive cage and the one screw on the bottom of the drive cage.
8. Replace the drive cage (see "replacing the drive cage" on page 151).
9. Attach the power cable to the back of the drive.
10. Attach the connector marked "Master" on the IDE ribbon cable to the back of the primary hard drive. After this primary connection is attached, twist the remaining part of the cable marked "Slave" on that same IDE ribbon cable and connect it to the secondary hard drive.
11. Connect the IDE cable to the motherboard.

To reassemble the computer:

1. Replace the side panel (see "replacing the side panel" on page 154).
2. Reconnect the power cord and all other cables.
3. Reconnect the modem/telephone cable.
4. Turn on the computer and all peripherals.
5. Install any software drivers supplied by the drive manufacturer.

removing the preinstalled hard drive

You need to remove the hard drive from the chassis if you want to replace it with a higher-capacity drive or if you want to safeguard your data when sending the computer out to be repaired.

To remove the preinstalled hard drive:

1. Turn off the computer and all peripherals.
2. Disconnect the modem/telephone cable.
3. Disconnect the power cord and all other attached cables (such as the keyboard, mouse, and monitor).
4. Remove the side panel (see "removing the side panel" on page 131).
5. Remove the drive cage (see "removing the drive cage" on page 133).
6. Remove the two screws on the top of the hard drive and the one screw on the bottom of the hard drive.
7. Pull the hard drive out, and store the drive and screws in a safe location.
8. Replace the drive cage and the side panel (see "closing the computer" on page 150).

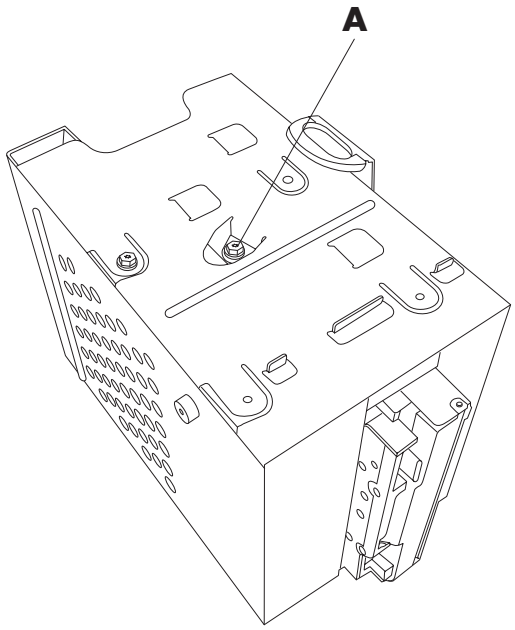
replacing the diskette drive

If you need to replace the floppy diskette drive, you can remove the existing drive and install a new one. To ensure that the drive fits properly into the PC, be sure to purchase the replacement diskette drive from HP. Refer to your *Warranty & Support Guide* for contact information.

To remove the existing diskette drive:

1. Turn off the computer and all peripherals.
2. Disconnect the modem/telephone cable.
3. Disconnect the power cord and all other attached cables (such as the keyboard, mouse, and monitor).
4. Remove the side panel (see "removing the side panel" on page 131).
5. Remove the drive cage (see "removing the drive cage" on page 133).

6 Remove the screw (**A**) on each side of the diskette drive.



NOTE: The second screw (**A**) is on the other side of the drive cage (not pictured).

7 Pull the diskette drive out.

To install a new diskette drive:

1 Slide the diskette drive into the drive cage, until the two screw holes align.
2 Attach the screws on each side of the drive cage.

To reassemble the computer:

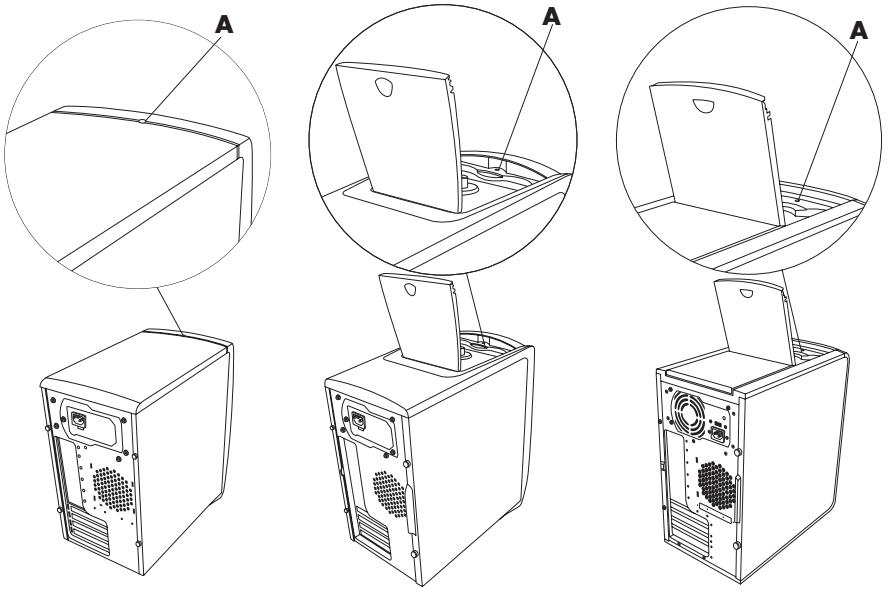
1 Replace the drive cage (see "replacing the drive cage" on page 133).
2 Reattach the cables to the back of the hard and diskette drives.
3 Replace the side panel (see "replacing the side panel" on page 154).
4 Reconnect the power cord and all other cables.
5 Reconnect the modem/telephone cable.
6 Turn on the computer and all peripherals.

replacing the optical drive

Your computer comes with one or two optical drives (CD-ROM, DVD, and/or CD-Writer or DVD+RW) in the top two bays that you can replace or upgrade.

To remove the existing optical drive:

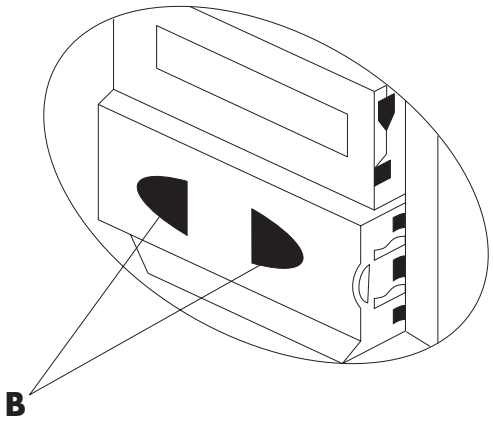
1. Turn off the computer and all peripherals.
2. Disconnect the modem/telephone cable.
3. Disconnect the power cord and all other attached cables (such as the keyboard, mouse, and monitor).
4. Remove the front cover: Locate the small release hole (**A**) on the top of the computer. On some computers the release hole is under the top CD holder door (Chassis II and Chassis III only). Insert a pointed object such as a strong paper clip or pen into the hole. The front cover pops open. Pull the cover up and out to remove.



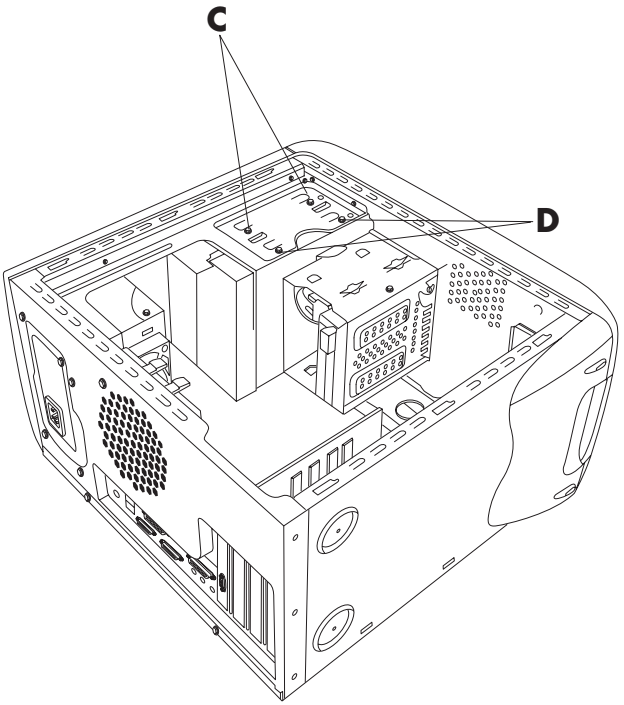
Chassis I **Chassis II** **Chassis III**

5. Remove the side panel (see "removing the side panel" on page 131).
6. Remove the fan duct (see "removing the fan duct" on page 132).

7 If you are adding a drive to an empty lower bay, remove the bay insert by putting your fingers in the holes (**B**) and pulling the insert toward you and out of the computer. Skip to the next section, "To install a new optical drive."



8 Locate the screws (**C** and **D**) on the optical drive.

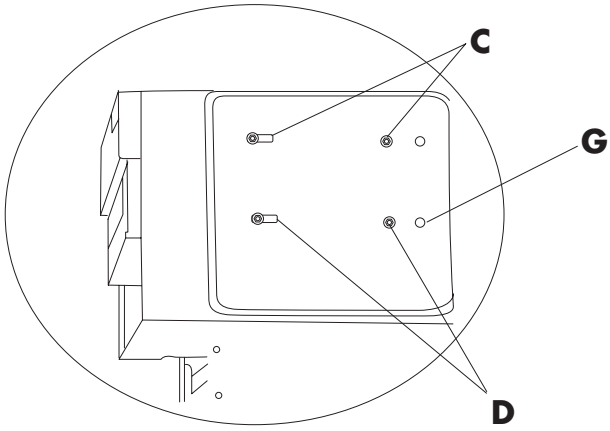


NOTE: The location of the screws varies, depending on the computer chassis you have. Make sure to identify your chassis on page 129, and refer to the appropriate optical drive drawings.

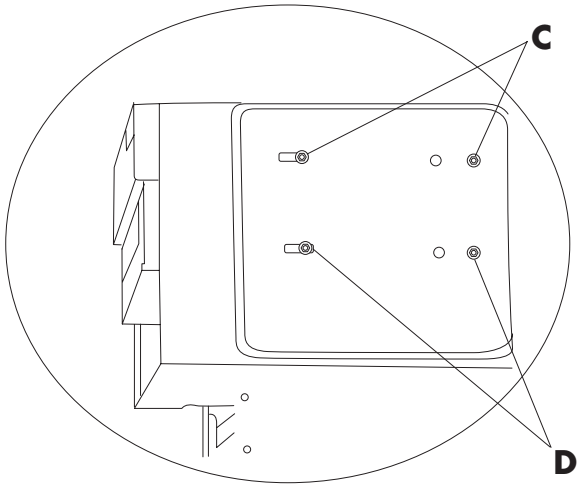
9 If you are removing the optical drive in the lower optical drive bay, remove the two screws (**D**) on the drive and push the drive partway out through the front of the computer.

Or

If you are removing the upper optical drive, remove the screws (**C** and **D**) on both optical drives and push both drives partway out through the front of the computer. (This allows better access to the cables at the back of the drive.)



Chassis I and Chassis II



Chassis III

10 Remove the power and IDE cables attached to the back of the drive you want to replace.

11 Pull the drive out through the front of the computer.

To install a new optical drive:

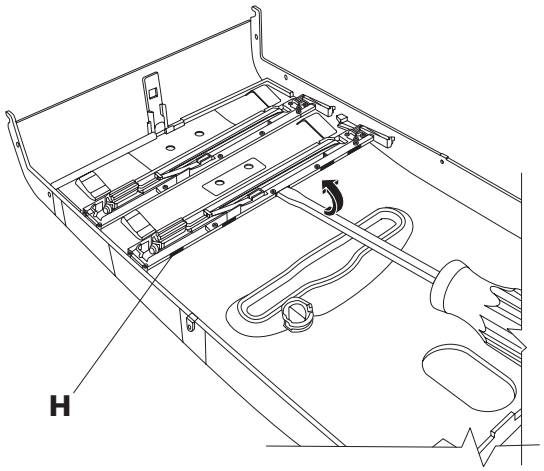
NOTE: Make sure the jumper on the new drive is in the CS (Cable Select) position.

1. Slide the new optical drive through the front of the computer. Don't slide the drive in all the way — you need room to attach the cables.
2. Connect the cables to the back of the drive(s).
3. Push the drive(s) all the way in, align the screw holes and insert the screws as follows:
   - upper drive bay, full-sized drive — use **C** screw holes.
   - lower drive bay, full-sized drive — use **D** screw holes.
   - lower drive bay, 3.5-inch drive in an adapter tray — use the rear (**D**) slotted screw hole and the (**G**) forward screw hole. This positions the 3.5-inch drive tray flush with the front cover.

NOTE: The 3.5-inch drive option applies only to Chassis I and II, and is not available for Chassis III.

To reassemble the computer:

1. Replace the fan duct and side panel (see "closing the computer" on page 150).
2. Skip this step if you are installing a full-sized drive or if you have Chassis III. Prepare the front cover when a 3.5-inch drive is in the lower drive bay: Remove the lower bay door by inserting a screwdriver blade at **H** (5 places) on the inside of the cover. Pry the door off the front cover.



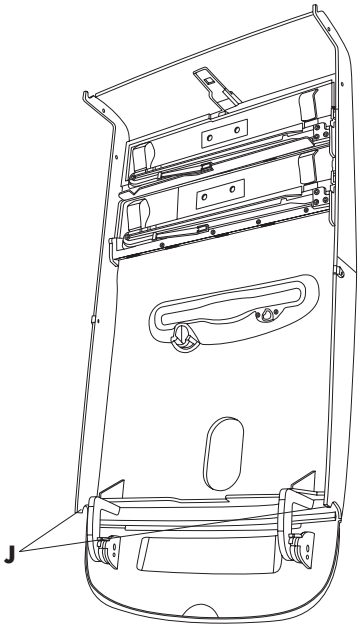
Chassis I and Chassis II only

NOTE: This step applies only to Chassis I and II, and is not available for Chassis III.

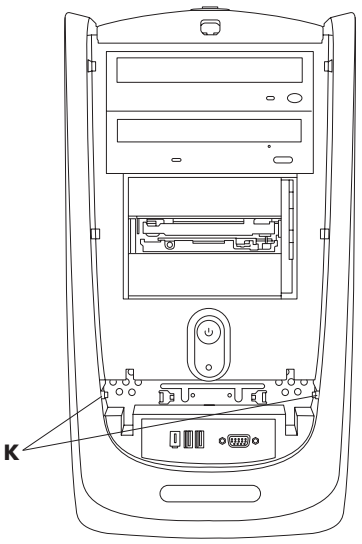
3 Lift the door of the CD holder located on the top of the chassis, if your computer has one (Chassis II and Chassis III only).

NOTE: If your computer has a top door and you don't lift the door of the CD holder before you attach the front cover, the front cover will not fit properly and could break, if forced.

4 Locate the notches (**J**) near the bottom of the front cover. The location of the notches will vary slightly, depending on your model.

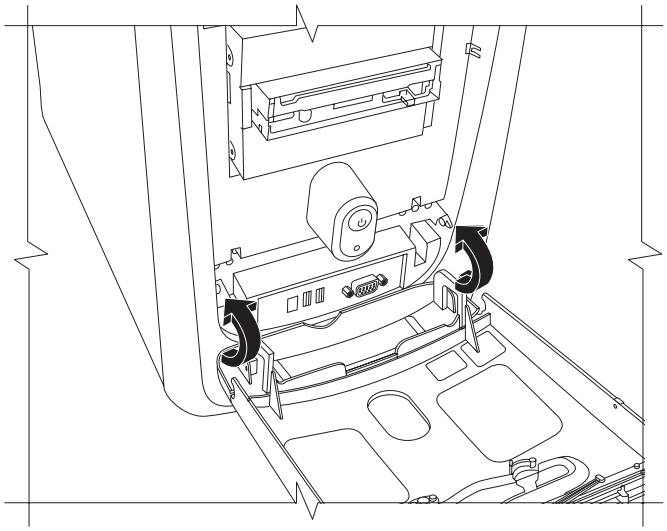


5 Locate the knobs (**K**) on the front face of the chassis.



6 Hook the notches onto the knobs.

7 Press the front cover toward the chassis until it snaps into place.



8 Close the door of the CD holder located on the top of the chassis, if your computer has one (Chassis II and Chassis III only).

9 Reconnect the power cord and all other cables.

10 Reconnect the modem/telephone cable.

11 Turn on the computer and all peripherals.

12 Install any software drivers supplied by the drive manufacturer.

replacing the battery

A lithium battery on the motherboard provides backup power for the computer's timekeeping capability. The battery has an estimated life expectancy of seven years.

When the battery starts to weaken, the date and time may be incorrect. If the battery fails, replace it with a CR2032 lithium battery (3 volt, 220mAH rating) or an equivalent battery.

WARNING: There is danger of explosion if the battery is incorrectly replaced. Replace only with the same, or equivalent, type of battery. Discard used batteries according to the manufacturer's instructions.

To replace the battery:

1 Turn off the computer and all peripherals.

2 Disconnect the modem/telephone cable.

3 Disconnect the power cord and all other attached cables (such as the keyboard, mouse, and monitor).

4 Remove the side panel (see "removing the side panel" on page 131).

5 If necessary to reach the battery, remove the drive cage (see "removing the drive cage" on page 133).

6 If necessary to reach the battery, remove the fan duct (see "removing the drive cage" on page 133).

7 If any cards restrict access to the battery:

- Remove the add-in card bracket. (See 7–9 of "installing add-in cards" on page 139.)
- Remove the cards that are on or near the battery.

8 With a pen or screwdriver, press the metal latch that holds the battery in its socket. The battery will pop out.

9 Install the new CR2032 battery in the socket, with the positive (+) side facing up.

To reassemble the computer:

1 Replace any cards that you removed, and then replace the add-in card bracket.

2 Replace the drive cage, fan duct, and side panel (see "closing the computer" on page 150).

3 Reconnect the power cord and all other cables.

4 Reconnect the modem/telephone cable.

5 Turn on the computer and all peripherals.

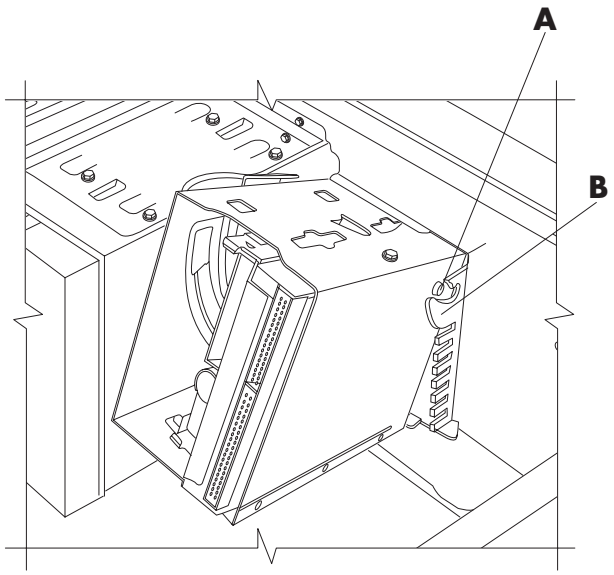
6 Run the BIOS setup program to reset the date and time.

closing the computer

After you have finished installing memory or drives, inserting or replacing add-in cards, or changing the battery, you need to replace the drive cage, the fan duct, and the side panel.

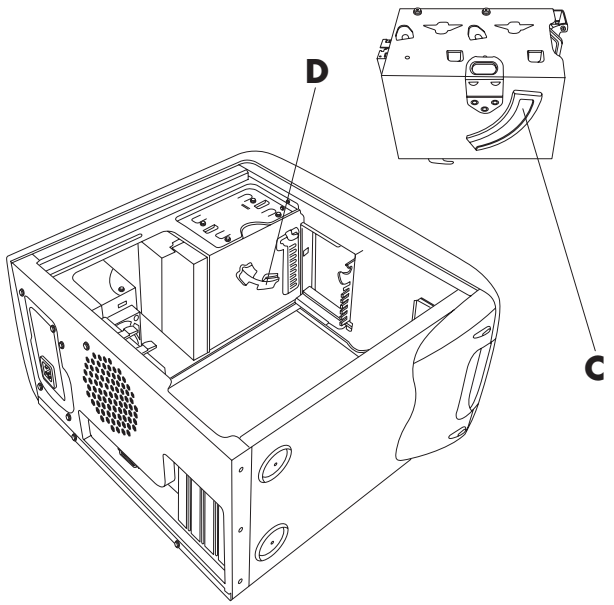
replacing the drive cage

1 Holding the drive cage at a 45-degree angle, slide the two nubs (**A**) on the drive cage into the guides (**B**) on the chassis.

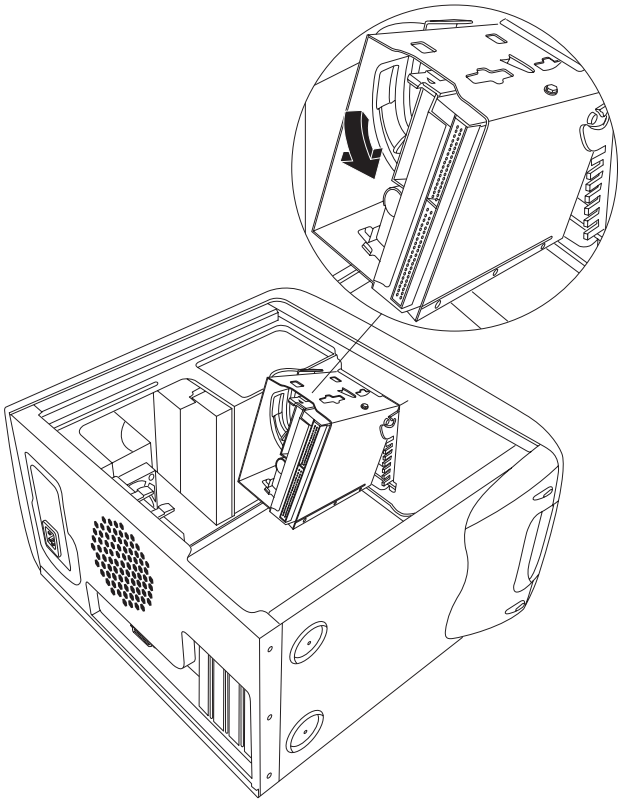


NOTE: The second nub (**A**) is on the other side of the drive cage (not pictured).

2 Align the track (**C**) on the drive cage with the guide (**D**) on the stationary drive cage.



3 Push the removable drive cage firmly against the stationary cage as you rotate the removable drive down into position.



4 To make sure that the cage is locked into position, grasp the drive cage and pull up forcefully.

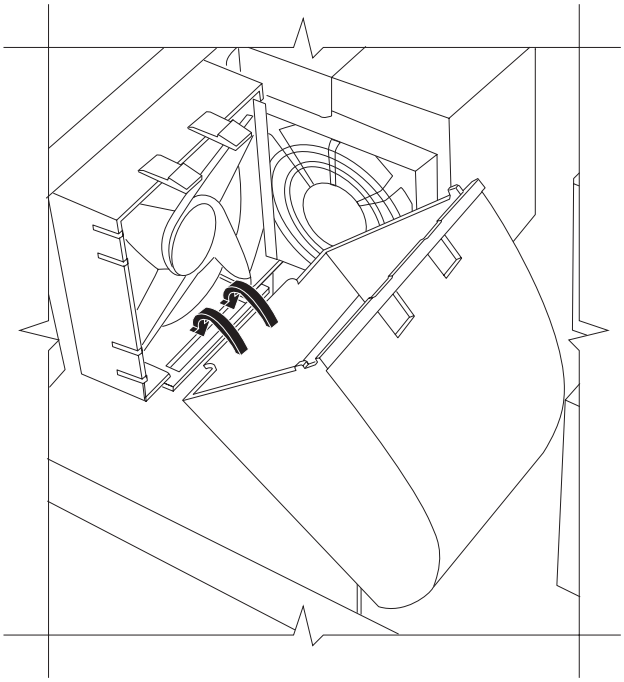
NOTE: If you are able to remove the drive cage without pressing the release tab, you didn't properly align the track with the guide. Repeat steps 1–4 above.

---

replacing the fan duct

NOTE: If your computer does not have a fan, skip this procedure.

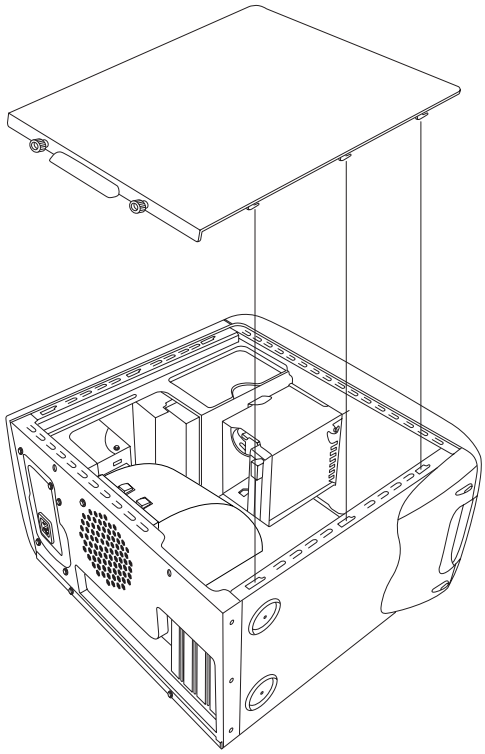
1 Holding the fan duct at a 45-degree angle, align the bottom of the duct with the hole on the fan holder.



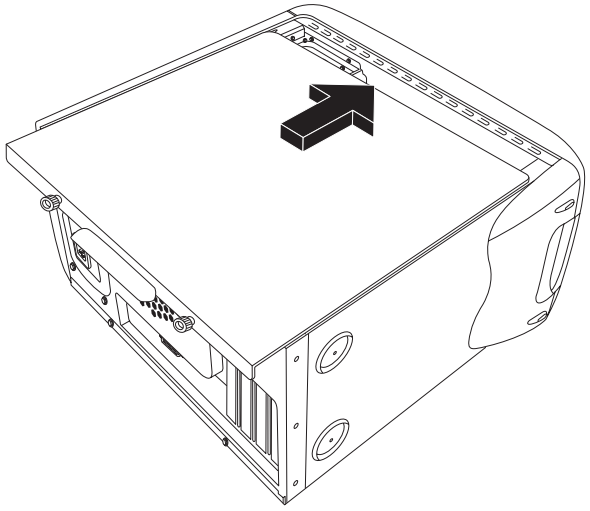
2 Rotate the fan duct into position and make sure it's securely locked.

replacing the side panel

1 Lay the side panel on top of the chassis, aligning the notches on the panel with the holes on the chassis.



2 Slide the side panel forward until it locks in place.



3 Tighten the thumbscrews on the side panel.

index

5.1 speakers, 43
56K modem, 9
7-In-1 memory card reader
  card types, 50
  removing and replacing, 101
  using, 50

A

add-in cards, removing or installing, 101
adding memory, 101
adjusting microphone volume, 47
adjusting speaker volume, 44, 80
All Programs menu, 17
America Online, troubleshooting, 86
Application Recovery, 92, 97
  warning, 97
autoscrolling, mouse, 20
available hard disk space
  increasing, 76

B

battery, replacing, 101
browsing the Internet, 34
buttons
  customizing, 29
  Eject, 54
  E-Mail, 28
  Help, 27
  HP, 27
  mouse, 19
  mouse scroll wheel, 19
  Mute, 28
  Off. *See* turning off PC
  On, 10
  Power, 10
  Search, 28
  special keys, 26
  Standby, 27
  Start, 16
  user, 27

C

cable tunnel, 70
cables, for connecting a TV, 66
card reader, 7-In-1, 50
card types, memory card reader, 50
carpal tunnel syndrome, 4
CD, creating, 62, 64, 65
CD/DVD
  country/region codes for DVD, 61
  creating CDs, 62, 64, 65
  drive types, 53
  Eject button, 54
  handling, 53
  inserting, 54
  keyboard button, 28
  opening drive, 54
  playing music, 57
  removing, 55, 81
  terminology for DVD, 58
  troubleshooting, 79
  using correct DVD disc, 65
closed session music CDs, 63
Combo drive, 55
components, 10
connecting
  a TV, 66
  Ethernet, 9
  multi-channel speakers, 44
connectors
  cable tunnel, 70
  PC back, 5
  PC front, 7
Control Panel, opening, 16
corrupted software, 97
country/region codes for DVD, 61
creating a DVD, 65
creating CDs using CD-RW drive, 62, 64, 65

creating CDs using Windows Media Player, 64
creating CDs with RecordNow!, 63
creating recovery discs, 95
creating Recovery Tools CD, 96
customizing keyboard buttons, 29

D

desktop, 16
desktop icons, removing, 78
device conflict, resolving, 85
device not working, 90
digital images, managing, 48
digital picture
  work area, 48
digital pictures, 48, 50
disconnecting TV, 69
Disk Cleanup utility, 78
diskette
  copying files, 56
  inserting, 56
diskette (floppy) drive, 56
domain name, 32
double-click, 19
drive
  locations, 7
  removing and replacing, 101
  types, 53
driver recovery, 92
driver rollback, 91
DSL (Digital Subscriber Line), 32
DVD
  country/region codes, 61
  creating, 65
  discs, 65
  inserting, 54
  keyboard button, 28
  opening drive, 54
  playing, 58
  removing, 55
  terminology, 58
  troubleshooting, 79
DVD player, multi-channel audio, 45
DVD Writer drive, 65
  using correct disc, 65

E

Easy Internet Sign-up, 33
e-mail
  address, 32
  defined, 32
  keyboard button, 28
  receiving, 35, 37
  sending, 35
  using Outlook Express, 36
erase disc, 63
erased software, 97
Ethernet
  about, 9
  connecting, 9

F

faxes, standby mode, 11
finding software programs, 17
floppy disk. *See* diskette
floppy drive, 56

G

gallery, 48
go back a day. *See* System Restore

H

hard disk cleanup, 78
hard disk space, increasing, 76
hardware, upgrading, 41
Help
  commonly asked questions, 1
  finding answers, 1
  MusicMatch Jukebox, 57
  Windows Media Player, 58, 65
Help and Support
  opening, 17
Help button, 27
hibernation mode, 12
  automatic, 13
high-speed Internet connection, 9
home Web page, 34
HP Image Zone, 48
  gallery, 48
  tab definitions, 48
HP keyboard button, 27
HP Picture Toolkit button, 27
hyperlink, defined, 32

I

indicators, keyboard, 26
installing software programs, 14
Internet
  about, 31
  browser programs, 34
  browsing the Web, 34
  connecting to, 8, 31
  Easy Internet Sign-up, 33
  finding an ISP, 32
  keyboard button, 28
  restricting content, 35
  searching the, 34
  signing up with an ISP, 32
Internet connection, high speed, 9

Internet Service Provider (ISP), defined, 31
InterVideo WinDVD Player, using, 58

K

keyboard
customizing buttons, 29
features, 21, 22
indicators, 26
troubleshooting, 87
types of buttons, 26
using, 21
wireless, 24
keyboard keys
alphanumeric, 24
arrow, 25
edit, 25
function keys, 25
numeric, 26

L

language
selecting for dual-language Video CD, 61
LEDs, defined, 23
logging off, 16

M

manuals, online, 41
memory card reader
card types, 50
memory, adding, 101
microphone
adjusting volume, 47
using, 46
using with multi-channel speakers, 47
Microsoft Recovery Console utility, 96
Microsoft XP Help, 42
modem
setting up, 8
V.92, 9
monitor, 10
changing resolution, 29
changing where desktop displays, 29
selecting, 29
troubleshooting, 83
mouse
autoscroll feature, 20
buttons, 19
double-click, 19
left-handed, 20
optical, 18
panning feature, 20
pointer speed, adjusting, 20
scrolling, 19
troubleshooting, 87
using, 18
wireless, 18
MPEG video, playing, 61
Multi-channel Sound Manager, 43, 44
multi-channel speakers, 43
connecting, 44
selecting, 45
using a microphone, 47
multi-storage bay, 69
multi-storage bay
problem with, 88
music
Help in MusicMatch Jukebox, 57
Help in Windows Media Player, 58, 65
keyboard button, 27
MusicMatch Jukebox, 27, 57
playing, 57, 58
Windows Media Player, 58
music CDs, closed session, 63
Mute button, 28

N

Net. *See* Internet, about
network interface
about, 9
no sound, 80

O

Off button. *See* turning off PC
On button, 7
online manuals, 41
onscreen guides, 18
opening and closing the PC, 101
operating system, 15
reinstalling, 99
operating system help, 42
Outlook Express, 36
receiving e-mail, 37

P

panning, scrolling mouse, 20
PC
Application Recovery, 92, 97
hibernation mode, automatic, 13
information about, 17
learning to use, 17
no sound, 80
not working, 87
problem turning on, 89
servicing and upgrading, 101
setting it up, 3
settings, 16
sleep mode. *See* hibernation mode

standby mode, about, 11
standby mode, automatic, 13
standby mode, manual, 11
System Recovery, 92
System Restore, 92
transferring files and settings to new PC, 14
troubleshooting, 79
turning off, 11
turning on, 10
viewing PC image on TV, 68
PC Help & Tools, 18
PC Recovery CD-DVD Creator program, 95
peripherals, 10
docking a device, 70
pictures, managing, 48
playing DVD movies, 58
disc types, 65
pointer speed, adjusting, 20
power management settings, modifying, 13
Print button, not working, 87
printer
troubleshooting, 90
using, 30
problem
DVD-R disc not working, 65
DVD-RW disc not working, 65
keyboard, 87
monitor, 83
mouse, 87
no sound, 80
PC not working, 87
printer, 90
troubleshooting, 79
turning on PC, 89
problem resolution, troubleshooting, 79
product notices, 39
programs, uninstalling, 77

R

receiving e-mails, 35
recording volume, adjusting microphone, 47
RecordNow!, using, 63
recovering system
System Restore, 92
using CDs/DVD, 99
Recovery CD-DVD Creator, 95
recovery discs, making, 95
Recovery Tools CD
making or starting, 96
registering your PC, 11
reinstalling software, 97, 98
remove files from CD, 63
removing and replacing drives, 101
removing desktop icons, 78
removing unneeded software, 77
repetitive strain injury (RSI), 4
resolution, monitor, 29
resolving a device conflict, 85
restarting the PC, 91
restoring system, 92
restricting Internet content, 35
RJ-45 port, 9
rollback, driver, 91

S

safety warnings, 2, 5
saving electricity, 11, 12
scrolling mouse, 19
searching
for files or folders, 16
the Internet, 34
selecting programs or documents, 16
sending an e-mail, 35
setting up PC, 3
settings
viewing or changing, 16
Volume Control, 44
shortcut icons, 16
show Volume icon in taskbar, 46
shutting down PC, 11
sleep mode. *See* hibernation mode
software
corrupted, 97
erased, 97
finding, 17
installing, 14
reinstalling, 97, 98
uninstalling, 77
solving common problems, 79
sound manager, multi-channel, 43, 44
sound, troubleshooting, 80
speaker volume, adjusting, 44
speakers, 43
multi-channel, 43
special offers, 39
Standby button, 27
standby mode
automatic, 13
manual, 12
Start button, 16
Start menu contents, 16
storage, multi-storage bay, 69

Support
messages, 39
telephone numbers, 41
surface, using mouse on, 18
System Recovery, 97
starting, if PC is not responding, 99
starting, if PC is responding, 98
using recovery discs, 94
warning, 98
when to use, 92
System Restore, 92, 96
system updates, 39

T

television, viewing PC image on a TV, 66
terminology for DVD, 58
tips, 39
transferring information to your new PC, 14
troubleshooting, 79
turning off PC, 11, 91
turning on PC
first time, 10
troubleshooting, 79
TV
connecting, 66
disconnecting, 69
TV-out, 66
cables, 66
connecting a TV set, 66
disabling TV option, 68
viewing PC image on TV, 68

U

uninstalling software, 77
Updates from HP, using, 39
updating, system, 39
upgrading PC, 41, 101
upgrading to V.92 modem features, 9
URL, defined, 32
User button, 27
using 7-In-1 memory card reader, 50

V

V.92 modem, 9
Video CD
dual-language, 61
playing, 61
viewing onscreen guides, 18
virus protection, 75
voltage requirements, 2
volume
adjusting, 44, 80
adjusting microphone, 47
controls, 28
show Volume icon on taskbar, 44
Volume Control settings window, 44
Volume icon, show, 46
volume, displaying icon in taskbar, 44, 46

W

warranty, 41
Web. (*See also* Internet)
browser programs, 34
page, 32
searching the, 34
Windows Media Player, 57
creating CDs, 64
Help, 58, 65
Windows XP, 15
device drivers, 90
Help, 42
WinDVD, 45
control panel, 60
starting, 59
wireless keyboard, 24
wireless mouse, 18
working in comfort, 4
writing
CD, 62, 64, 65
DVD, 65